

THE ARCHITECT & BUILDING NEWS

4 NOVEMBER 1954 · VOL. 206 · NO. 19 · ONE SHILLING WEEKLY

- OFFICES FOR COSTAIN LTD.
- HEALTH BUILDINGS CONFERENCE: II
- CURRENT MARKET PRICES

PUBLISHED IN LONDON SINCE 1854



Earning dollars in Canada —

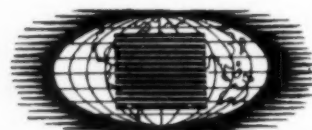
At Toronto's 1954 International Trade Fair large orders for Brady Rolling Doors were booked on their stand, bringing more dollars to Britain. With an international reputation for reliability, Brady Rolling Doors are aiding British industry throughout the world.



This illustration of the Brady Stand at the Toronto Trade Fair shows a large F3 Rolling Door in the centre. On the left is a small grille with Shutter in front of it, and on the right an aluminium Rolling Shutter, all suitable for Bars and Service Openings

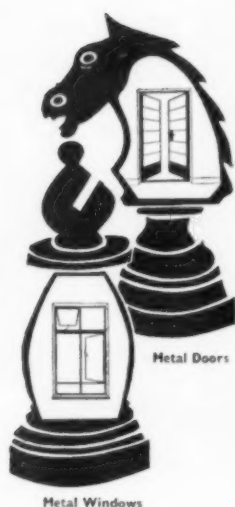
G. BRADY & CO. LTD MANCHESTER 4 Telephone COLlyhurst 2797/8

LONDON New Islington Works, Park Royal, N.W.10
BIRMINGHAM Rectory Park Road, Sheldon, 26
CANADA David C. Orrock & Co. (G. Brady & Co. Canada Ltd.)
 1405 Bishop Street, Montreal 25, Que.
 and also at 23 Scott Street, Toronto, 1
U.S.A. G. Brady & Co. Ltd., 11 West 42nd St. New York 18, N.Y.
NORWAY An Thorbjørnsen, Kongensgate, 14, Oslo
 And also at Cape Town



we shutter the world

MANUFACTURERS OF BRADY HAND AND POWER OPERATED LIFTS



YOU CAN SELDOM CHECK GERRY DAWBARN

Gerald V. Dawbarn* used to play chess "almost up to championship standard"—as he says modestly. He comes of a legal family. He has been in metal windows for 20 years. And he manages the Oxfordshire, Buckinghamshire, Berkshire and Bedfordshire area for Williams & Williams.

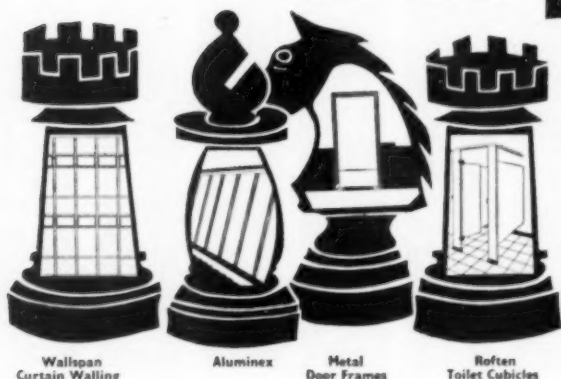
What does it all add up to? Why Sir, efficiency! Acute attention to detail. Proper planning. Knowing the facts. Anticipating your moves. You don't need to worry when Gerry Dawbarn is on the job with his skilled team of representatives, draughtsmen, estimators and window fixers.

METAL WINDOWS

WILLIAMS & WILLIAMS



Member of the Metal Window Association



* MR. G. V. DAWBARN, WILLIAMS & WILLIAMS LTD.
169 Kings Road, Reading (2540).

Other offices at: Belfast (23762). Birmingham (Shirley 3064).
Bristol (38907). Bromley (Ravensbourne 6274).
Cardiff (27092). Glasgow (Douglas 0003). Leeds (21208).
Liverpool (Central 0325-6). London (Sloane 0323).
Manchester (Blackfriars 9591). Newcastle-upon-Tyne (21353).
Newmarket (2277). Nottingham (52131). Sheffield (51594).
Southampton (26252). Tunbridge Wells (3269).

BRICK Production up again

Figures for the 12 months ending June show a further substantial rise in brick production. Output for the previous 12-month period was exceeded by 460 millions.

The accompanying diagram reflects the success of the industry's development programme.

New and extended works, new machinery and new methods are being employed to ensure an adequate supply of bricks for all building requirements.



Issued by

The National Federation of Clay Industries, London, W.C.1



ESTATE
FOR THE
HOUSE

ELLARD

SLIDING DOOR GEAR



RADIAL
FOR THE
GARAGE

FOR
HOUSING
ESTATES

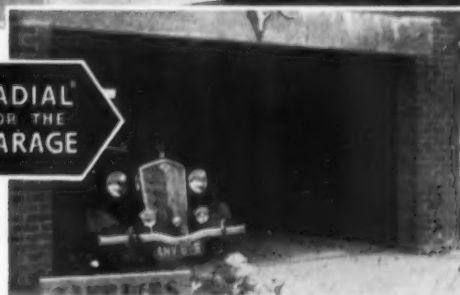
FOR THE
PRIVATE
RESIDENCE

ELLARD Sliding Door Gear is ideally suited for use on large housing estates and for the distinctive private residence. ELLARD "Estate" Gear is silent—easy running—troublefree, and has elegant appearance. ELLARD "Radial" Gear, for garages and out-houses, provides smooth-running action, gives maximum space, and is easy to fix. Both these well-known types of ELLARD Door Gear are moderate in price and immediate delivery can be obtained from large ironmongers and builders' merchants throughout the country.

ESTATE
FOR THE
HOUSE



RADIAL
FOR THE
GARAGE



CLARKE ELLARD ENGINEERING COMPANY LTD
WORKS ROAD • LETCHWORTH • HERTFORDSHIRE

TELEPHONE 613/4

A constant supply of hot water

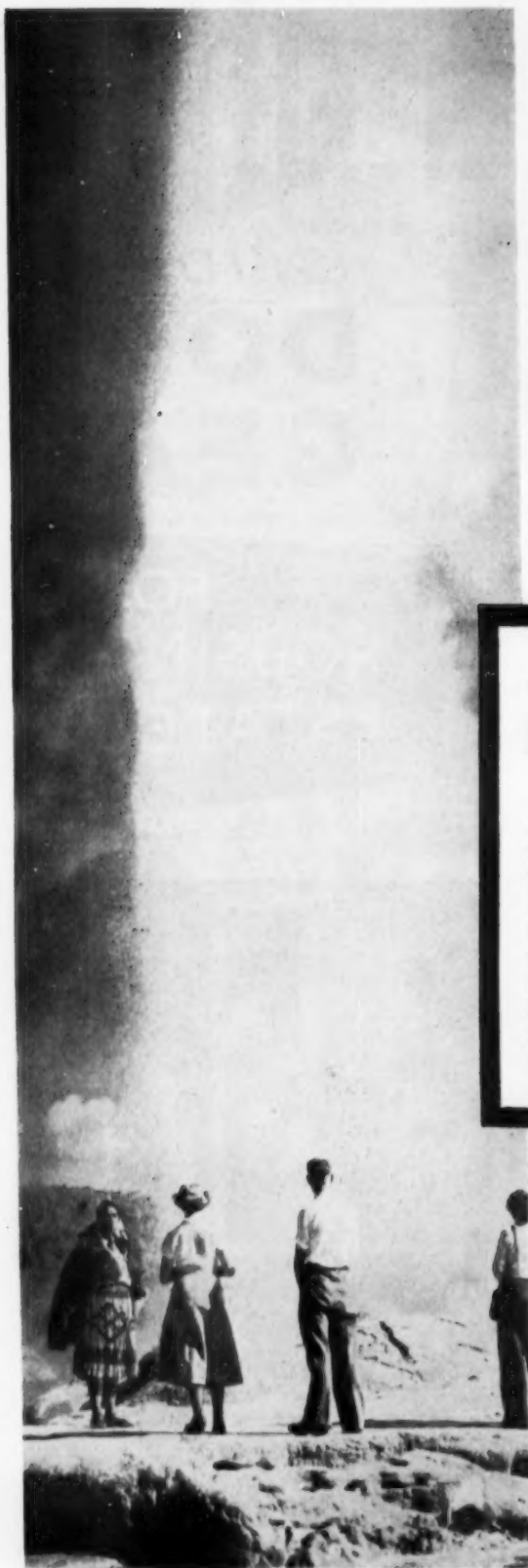
Certain Maori housewives use natural springs and geysers for their domestic hot water. The wiser British housewives use the Flavel Boiler set, a unit that provides adequate space heating and a constant supply of hot water. It is self-contained and fits into a brick opening of 22 $\frac{3}{4}$ " wide, 25 $\frac{1}{2}$ " high by 13 $\frac{1}{2}$ " deep.

The FLAVEL BOILER SET

A standard Newbold grate.
Standard boiler 12" \times 6 $\frac{3}{4}$ " \times 5" C.I.
Steel or Copper tapped
1" B.S.P. reversible
for R. or L.H. Side
connections. Remov-
able cover plate.
Damper with 4 $\frac{1}{2}$ "
opening for chimney
sweeping.



*The Pohutu Geyser, near
Rotorua, New Zealand.
Photograph by kind
permission of the High
Commissioner for New
Zealand.*



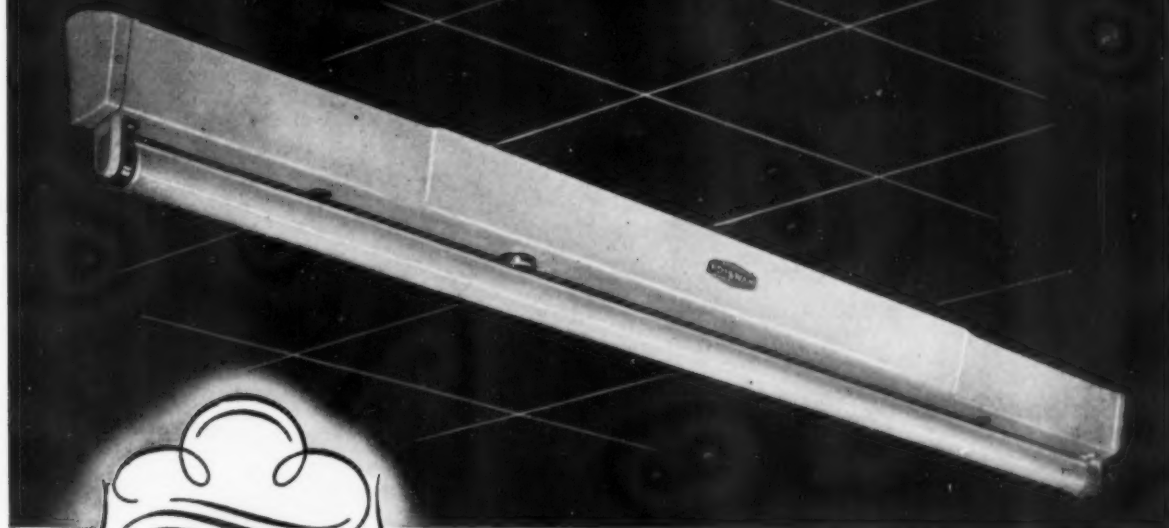
FLAVELS
of LEAMINGTON 

Makers of fine cooking and heating
appliances since 1777

Telephones : Leamington 100 (Head Office), 3091/2 (Sales).

Telegrams : Flavels.

Installation Costs CUT-



with
low-priced
40 Watt
4ft.
Ediswan
lighting
fitting

Cat. No. LS. 4007

The unit comprises a tapered channel body fitted with die cast ends. Into the top of the channel portion is fitted a sheet metal ceiling plate carrying the control gear.

The ceiling plate and channel are united by captive screws, the heads of which project on the underside of the channel. The sheet metal is pretreated before being finished glossy white stoved enamel.

The Patent "PENDICONE" fixing method enables the unit to be installed very quickly by one man. "PENDICONE" washers (patent applied for) used in conjunction with the two-way key slots in the ceiling plate allow the two c/s ceiling screws to be inserted before the ceiling plate is fixed to ceiling.

*Price £5 . 6 . 8 complete with control gear for
switch start at 200-250V, 50 cycles.*

EDISWAN Fluorescent Lighting Equipment

The 4ft. fitting illustrated and the 5ft. fitting of same design are offered for use in situations where bare lamps are acceptable. For the Ediswan range of fittings providing various forms of light control ask for Broadsheet No. LE.1788.

The Edison Swan Electric Co. Ltd., 155 Charing Cross Road, London, W.C.2.

Member of the A.E.I. Group of Companies.



***There's a Stelrad Radiator
for every Building Need***

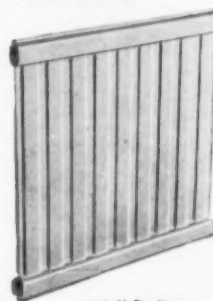
As your plans for central heating take shape, you will find in the Stelrad range of radiators a means of keeping heating efficiency in harmony with interior design.

Two well-known Stelrads are shown on the right, and an eleven inch two column curved radiator is shown in the picture above. Variations of these radiators are, of course, available.

We have agents and representatives throughout the British Isles at your disposal to advise on the Stelrad range of central heating radiators.



Four column
Stelrad Radiator



Wall Radiator

**STEEL RADIATORS
LIMITED**

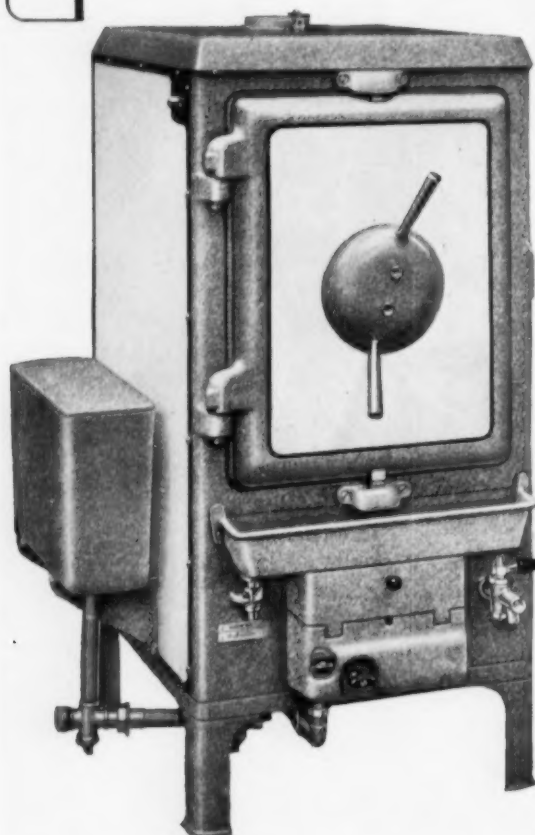
BRIDGE ROAD, SOUTHAL, MIDDLESEX
Telephone: Southall 2603



*Finest Wood
Fibre Hardboard*

MANUFACTURED IN FINLAND

Good cooking's part of the plan



When plans are being drawn up for kitchen installations—be it the largest range or smallest hot-plate, Radiation can do architects a real good turn. For Radiation Large Cooking Equipment, installed in the best working position, ensures first-class cooking at all times.



For steaming vegetables and puddings, where gas is the fuel, the most useful appliance is the compact, thermostatically controlled **KESWICK STEAMER**. Also available, in various sizes, are **PRESSURE STEAMING OVENS** for kitchens where steam is laid on. Steaming is carried out under 5-lb. pressure, and the door has an effective safety device.

Please consult us on all large cooking problems

WE SHALL BE GLAD TO SEND YOU A FULLY DESCRIPTIVE LEAFLET
JUST WRITE TO: DEPT. L.C.B., 7 STRATFORD PLACE, LONDON, W.1 MAYfair 6462



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Messrs. Bourjois Ltd.
Perfumery & Toilet Soaps Factory,
Queensway, Croydon.



Contractors: Walter Lilly & Co. Ltd.
Westminster, S.W.1

This is an excellent example of the use of Snowcem for decorating and protecting a factory of modern design.

SNOWCEM is easily applied to concrete, cement rendering or suitable brickwork by brush or spray. Available in seven colours: White, Cream, Deep Cream, Buff, Pink, Silver-Grey and Pale Green.

SNOWCEM



*Decorates and protects at **LOW** cost*

WATERPROOF CEMENT PAINT

*** BRITISH CEMENT IS THE CHEAPEST IN THE WORLD**

This water-
does not brush, peel or flake off

THE CEMENT MARKETING COMPANY LIMITED
Portland House, Tothill Street, London, S.W.1
OR G. & T. EARLE LTD., HULL
THE SOUTH WALES PORTLAND CEMENT & LIME Co. Ltd.,
Penarth, Glam.

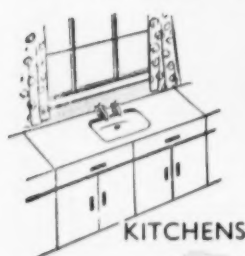
*Be right
with*



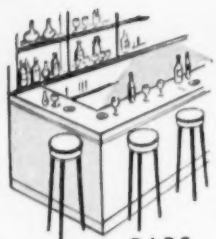
AT HALF THE PRICE

The new amazing

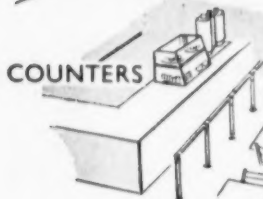
**Plastic
Faced Board**
Ideal for . . .



KITCHENS



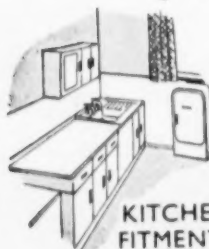
BARS



COUNTERS



CANTEENS



KITCHEN
FITMENTS



SHOP
FITTINGS

REMEMBER the name **BERITE**. You'll be asked about it often from now on. For this plastic board, at a startlingly reasonable price, is unbeatable for—

WEARABILITY!

The Plastic Face is washable, resistant to heat, alcohol and water. Can be cleaned by merely wiping. (Ideal for kitchens, bathrooms, hotel bars, etc.)

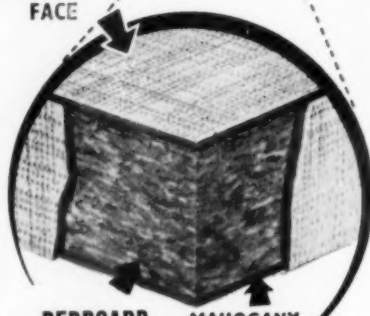
COLOUR APPEAL!

In any of five linen pattern shades; pink, blue, grey, green, buff.

ALLROUND CONVENIENCE!

BERITE can be cut, worked, drilled, nailed and screwed with ordinary tools. Its convenient thickness ($\frac{1}{2}$ " or $\frac{3}{4}$ ") saves plywood bonding, etc.

**PLASTIC
FACE**



**BERBOARD
CORE**

**MAHOGANY
BACK**

Hardwood, Berlam or other suitable Edging as applied by consumers.

Already bonded to a $\frac{1}{2}$ " or $\frac{3}{4}$ " backing at amazingly low prices.

And BERLAM, a plastic-finished sheet, is obtainable separately—again at exceptionally moderate prices!

Both BERITE and BERLAM with basic user prices of 3/9—4/11 and 2/9—3/4 ex-works per square foot respectively are offered at prices, to the best of our knowledge, far cheaper than any comparable material on the market today.

★ STOCK SIZE SHEETS 8 ft. x 4 ft. and 4 ft. x 4 ft.

From your Merchants and Stockists, or if there is any difficulty, please write to us at Dept. BN

BERITE LTD

Lammas Road • Lea Bridge Road • London E.10

"Ready-to-use," higher efficiency, lower operating costs

easier maintenance . . .

a **NEW** British made **PACKAGED** AUTOMATIC **BOILER**

for gas, oil or combined

gas/oil firing



Wherever steam or hot water are required, the 'Powermaster' Automatic Boiler offers outstanding advantages. It can be 'delivered to your door,' complete with all the necessary equipment and controls, ready for immediate connection. It requires no special steel or brick base. It gives efficient space heating without 'space eating.' Above all, it automatically ensures higher operating efficiency, saves fuel and labour, is clean and smokeless. For full details and specifications of the 'Powermaster,' developed on a proved American-type packaged automatic boiler and now built in this country by 'G.W.B.', write or telephone the address below.

SOME COST AND LABOUR-SAVING FEATURES

Simplified installation—no special foundation is required, no costly steel or brick stack.

Reduces fuel costs—high operating efficiency and a special air atomising burner system guarantees highest thermal efficiency, even when running at less than full capacity.

Full modulation—modulating motor automatically positions both the fuel valve and the air damper according to the demand on the boiler; specific firing rate is correctly proportioned for efficient operation.

Easy maintenance—quick access to both water side and fire side cuts down cleaning and inspection time; non-coking burners operate more efficiently, require far less

THE *Powermaster*

attention. Shutdown time greatly reduced.

Saves man-hours—automatic controls reduce attendant's time to a minimum.

Saves plant space—takes up far less space than required by ordinary boiler equipment of equal capacity.

Cleaner operation—no smoke, no dirt, no soot, no ash removal.

Automatic safety—fully protected against all operational hazards by complete safety equipment.

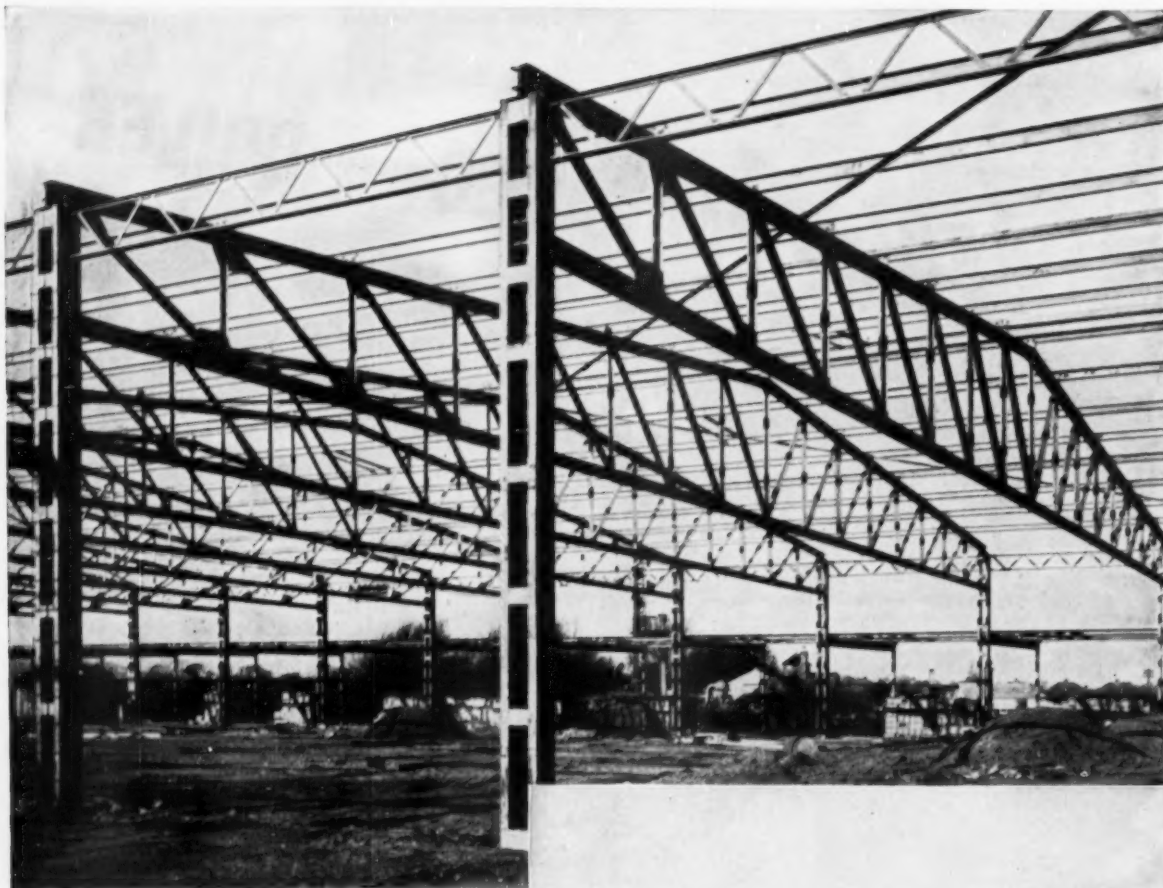


G.W.B. FURNACES LTD.

Boiler Division

DIBDALE WORKS, DUDLEY, WORCS · Tel: Dudley 4284/5

Proprietors: Gibbons Bros. Ltd. and Wild-Barfield Electric Furnaces Ltd.



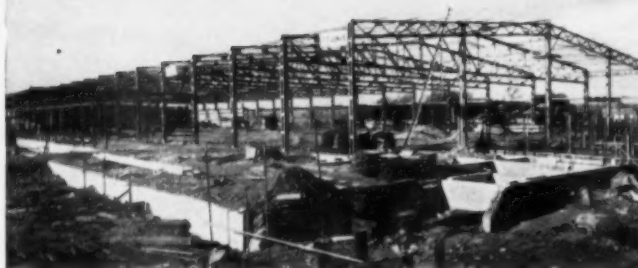
**S. P. D. DISTRIBUTION CENTRE,
PERRY BARR, near BIRMINGHAM.**

A C.A.S. (Industrial Developments) Ltd., Development.

Architects: LLEWELLYN SMITH & WATERS,
M.B.E., F.F.R.I.B.A.

Consulting Engineers: ANDREWS, KENT & STONE.

General Contractors: C.A.S. (CONTRACTORS) LTD.



**Steelwork fabricated and erected
by**

T.C. JONES
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BUTE STREET, CARDIFF

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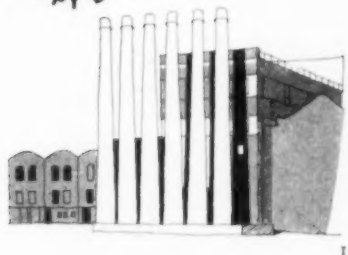


Telephone: SHEpherds Bush 2020

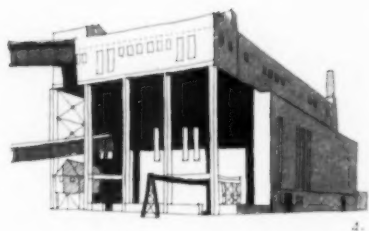
Telephone: Cardiff 28786

Telephone: Pentre 2381





Whatever you build...



All over the country you see increasing evidence of the efforts we are making to satisfy growing demands, with more kilns now producing more and more bricks and blocks, and with organised distribution by road, rail and water.

1. CHIMNEYS FOR ANSELL'S BREWERY, BIRMINGHAM.
Consulting Engineers: Webber & Varlow, Birmingham. *Contractors:* Danks of Netherton Limited.
150,000 Phorpres Commons, 94,500 Phorpres Radials.
2. HOUSES IN THE CAMBRIDGE AREA.
Architects: Lanchester & Lodge. *Contractors:* Rattee & Kett Ltd.
350,000 Phorpres Commons, 250,000 Phorpres Tuscan.
3. HOUSES AT HEMINGFORD ABBOTS FOR ST. IVES R.D.C.
Architects: Lea, Milner & Wardley. *Contractors:* Marriott & Walker Ltd.
120,000 Phorpres Commons, 96,000 Phorpres Rustics.
4. RETORT HOUSE, TINGLEY GAS WORKS, N.R. WAKEFIELD.
Engineer: H. Johnstone, M.Inst.G.E., A.M.I.Mech.E., Chief Engineer, North Eastern Gas Board.
Contractors: Woodall Duckham Construction Co. Ltd.
462,000 Phorpres Commons, 656,000 Phorpres Rustics, 1,800 Phorpres Specials.
5. FACTORY EXTENSION, VAUXHALL MOTORS LTD., LUTON.
Architects: Howard, Souster & Partners. *Contractors:* George Wimpey & Co. Ltd.
1,131,000 Phorpres Commons, 423,000 Phorpres Rustics.
6. FLATS, LILESTONE ESTATE, MARYLEBONE, FOR LONDON COUNTY COUNCIL.
Architect: J. L. Martin, Architect to the Council. *Contractors:* A. T. Rowley (London) Ltd.
400,000 Phorpres Commons, 200,000 Phorpres Saxons.



LONDON BRICK COMPANY LIMITED

Head Office: AFRICA HOUSE, KINGSWAY, LONDON, W.C.2
Telephone: Holborn 8282. *Midland District Office:* Prudential Buildings, St. Philip's Place, Birmingham, 3
Telephone: Colmore 4141. *South Western District Office:* 11 Orchard Street, Bristol, 1. Telephone: Bristol 23004/5
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BY APPOINTMENT
BRICKMAKERS TO
THE LATE
KING GEORGE VI
LB31
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For Romans... **MOSAIC**



But **MODERN LIVING**
calls for
DUREVER
(VINYL) FLOORINGS

Our first-class Laying Service is at your command.
We will gladly supply estimates on receipt of
your enquiry.

Manufactured by

BRITISH



LIMITED

Gay, colourful, hard wearing—**DUREVER** is
absolutely right for this day and age. Not affected
by oils, grease or most acids. Available in seventeen
attractive colours in tiles 12" x 12", 24" x 24" and
rolls 36" wide. In two grades: Comet and Superfort.

Remember, also, these other outstanding
Floorings in the Mouldex Range

MOULDEX HARD RUBBER FLOORING
(American Type)

MOULDEX NON-STATIC VINYL FLOORING

Write for samples and quotations

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INDUSTRIAL PLANT *and* SUPPLIES

**BOILERS *and*
ACCESSORIES**

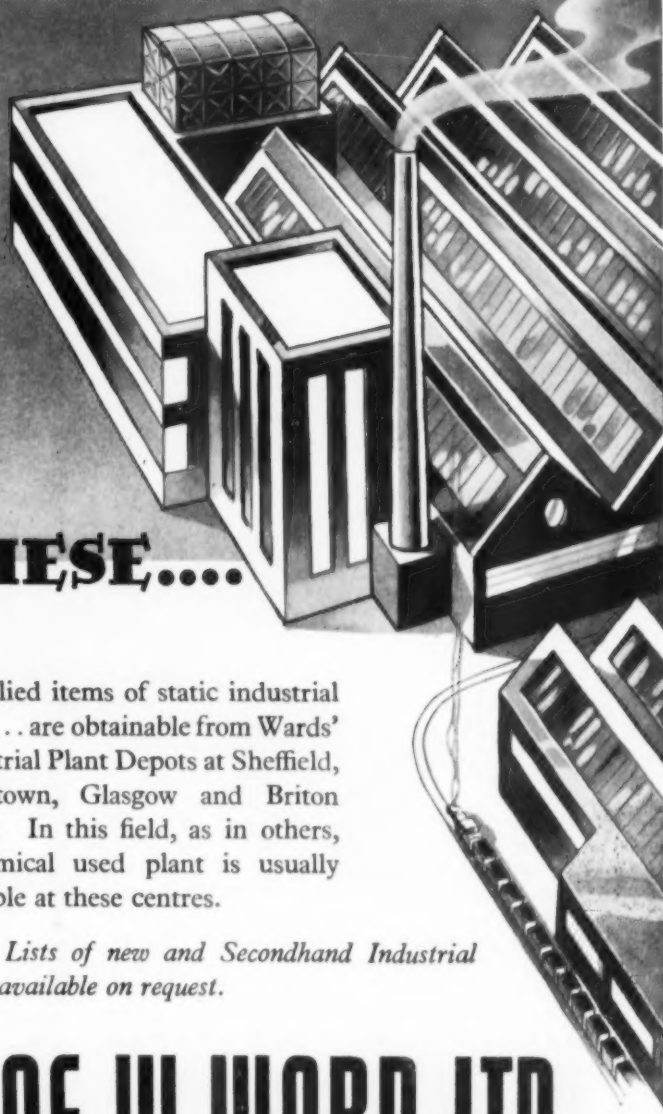
**PIPES *and*
FLANGES**

**STEEL *and* ALLOY
SCAFFOLDING
and LADDERS**

**WELDED *and*
RIVETTED VESSELS**

**AIR *and* GAS
RECEIVERS**

**ASBESTOS
PACKINGS *and*
JOINTINGS**



THESE....

and allied items of static industrial plant... are obtainable from Wards' Industrial Plant Depots at Sheffield, Silvertown, Glasgow and Briton Ferry. In this field, as in others, economical used plant is usually available at these centres.

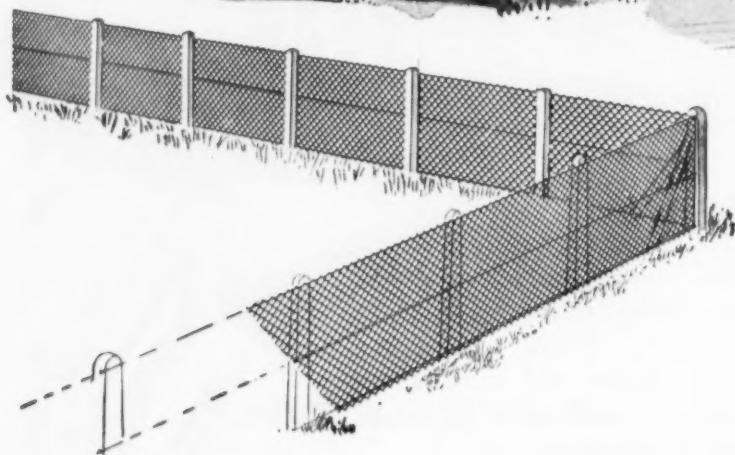
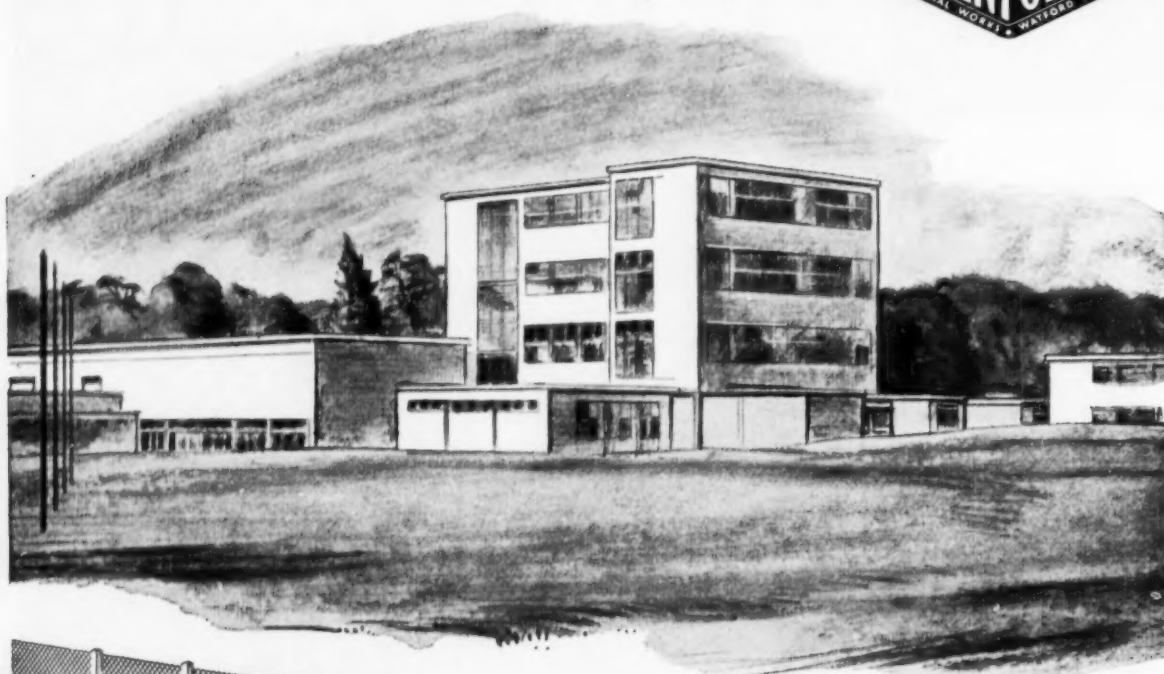
Stock Lists of new and Secondhand Industrial Plant available on request.

THOS. W. WARD LTD
INDUSTRIAL PLANT DEPARTMENT
ALBION WORKS · SHEFFIELD

London Office—

BRETENHAM HOUSE · LANCASTER PLACE · STRAND · W.C.2

The Sign of Confidence —



the best in fencing

We illustrate an artist's impression of the recently completed School at Wokingham, Berks. Designed by the Development Group (Architects and Building Branch) of the Ministry of Education in collaboration with Berkshire Education Committee.

Fencing by Penfold—the Chain Link Fencing, Concrete Posts and Fittings were all manufactured at our Watford factory and erected by a team of our specialist erectors.

MANUFACTURED AND ERECTED BY—

PENFOLD

FENCING AND ENGINEERING LTD.

IMPERIAL WORKS • BALMORAL ROAD • WATFORD • HERTS.

★
You are invited to visit us at Stand No. 237 (Grand Hall Gallery), Public Works and Municipal Services Congress and Exhibition, Olympia, London. Nov. 15-20.

Telephone: Watford 2241. Telegrams: "Penfold, Watford."



... it's a colourful life

... thanks to Dockers' Paints

**Dockers'
Quality**

Dockers have been famous for generations for quality. It is traditional throughout the Company that only the very best will suffice.

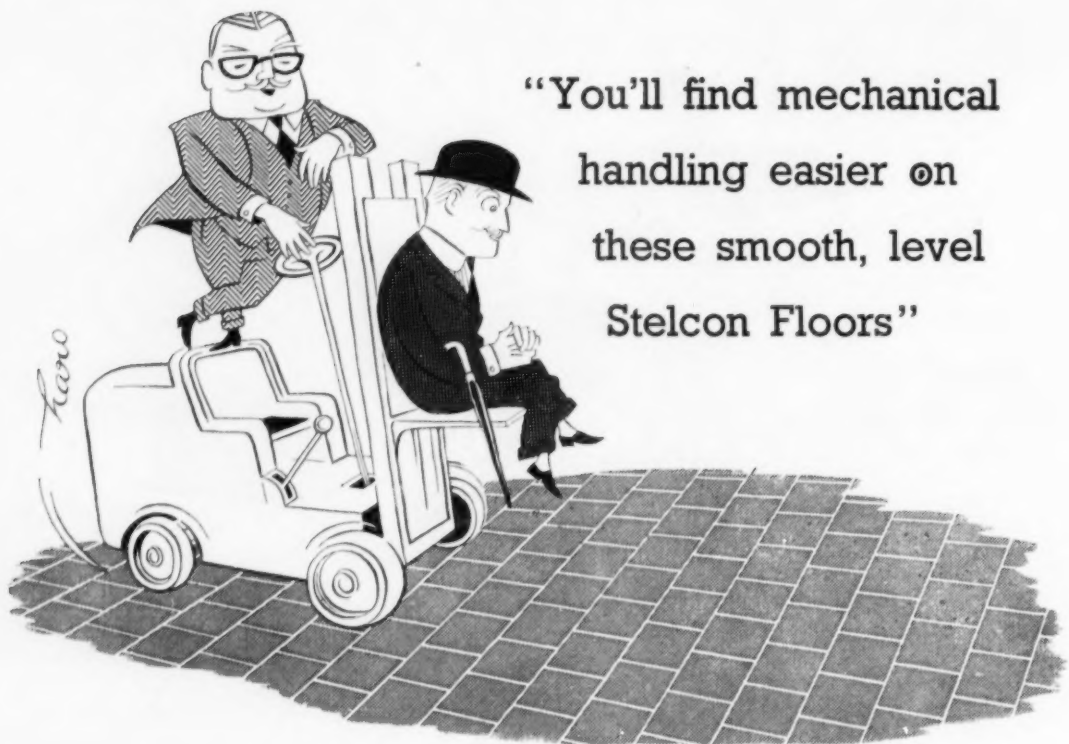
You can depend on Dockers' Quality.

These days each colour can do a specific and important job of work. Bright colours in a factory at all danger points, for instance; and colour tie-ups in kindergartens on your-cloakroom-your-classroom principle. Colour is busy helping, soothing, guiding and classifying in hospitals and offices, too. To make this comparatively recent colour trend easier to handle, Dockers have produced 47 colours taken from the Munsell range. The colours are all made up from nine basic tints plus black and white. Dockers believe this simplification will greatly assist the architect in planning new colour schemes.

DOCKER BROTHERS

Makers of Paints, Lacquers and Varnishes for every purpose

LADYWOOD, BIRMINGHAM, 16 London Showrooms: 17 Berners St., W.1



"You'll find mechanical
handling easier on
these smooth, level
Stelcon Floors"

Modern mechanical handling works best
when floors are smooth and even. You can carry
maximum loads without mishap. That's why more
and more industrial concerns are installing Stelcon Floors —
they like things to run smoothly all the time.
Stelcon Anchor Steel Plates and Steel Clad Flags also
provide dustless, hygienic floors of great strength
and durability. Full details sent on request.

You'll find
Stelcon
FLOORS
in every industry
— everywhere



To satisfy the require-
ments for a non-dusting,
level surface, Stelcon
Anchor Steel Plates
were chosen for the floor
of their new Strip Mill
by Messrs. Firth
Vickers Stainless Steels
Ltd., Sheffield.

In Aden

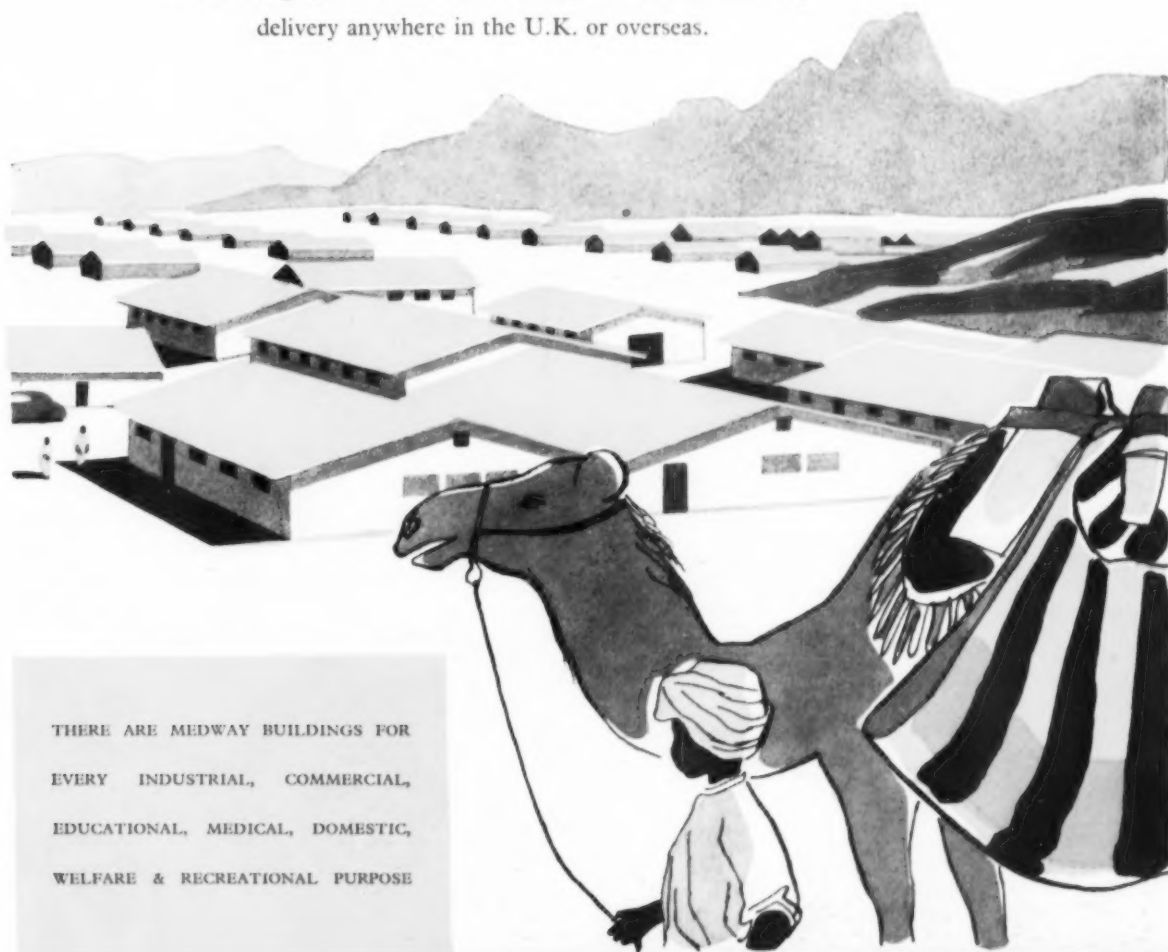
or Andover

Construction goes ahead

A hospital building for the Arabs of sun-drenched Aden . . . extra classrooms for the school children of Andover . . . wherever progress is on the march, additional construction is a necessity.

The Medway unit systems of construction—permitting a choice of alternative methods—offer the advantages of easy handling, quick erection, exceptional adaptability and lower cost.

Various designs, made in over 100 sizes, are available for early delivery anywhere in the U.K. or overseas.



THERE ARE MEDWAY BUILDINGS FOR
EVERY INDUSTRIAL, COMMERCIAL,
EDUCATIONAL, MEDICAL, DOMESTIC,
WELFARE & RECREATIONAL PURPOSE

Let us provide a
practical solution to your particular
problem. Send us details or
ask for a representative to call.

MEDWAY TIMBER BUILDINGS

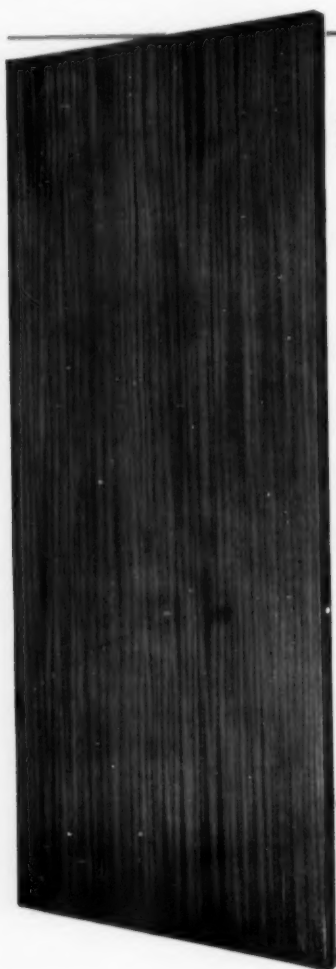
MEDWAY BUILDINGS & SUPPLIES LTD., 7 PHOENIX WHARF, ROCHESTER, KENT. Telephone: STROOD 7521

HILLS ARISTOCRAT

the decorative flush door with the KREIBORD core...

An attractive door of outstanding quality and distinction. Hand-finished by expert craftsmen and suitable for polishing, it is available faced with fine French Walnut, European Figured Oak or West African selected Mahogany veneers to your choice. The greatest care is exercised in the selection of these distinctive veneers and they are carefully matched for figure and colour.

The unique KREIBORD core—a new development exclusive to Hills—is a composite wood/resin board produced as a continuous extrusion. It has a high strength/weight ratio, exceptional stability and excellent insulation properties.



- Solid type KREIBORD core with 100% glueing area
- Provision for lock 20" x 6" situated at centre of closing stile
- Timber Framing 2" min.
- Weight 47 lbs. approx
- Finished thickness 1 5/8"
- Standard Sizes:
 - 6' 6" x 2' 9"
 - 6' 6" x 2' 6"
 - 6' 6" x 2' 3"
 - 6' 6" x 2' 0"
- SUITABLE FOR POLISHING



Find out more about this quality door by sending for further details and prices NOW!

F. HILLS & SONS LIMITED, Norton Road, STOCKTON-ON-TEES

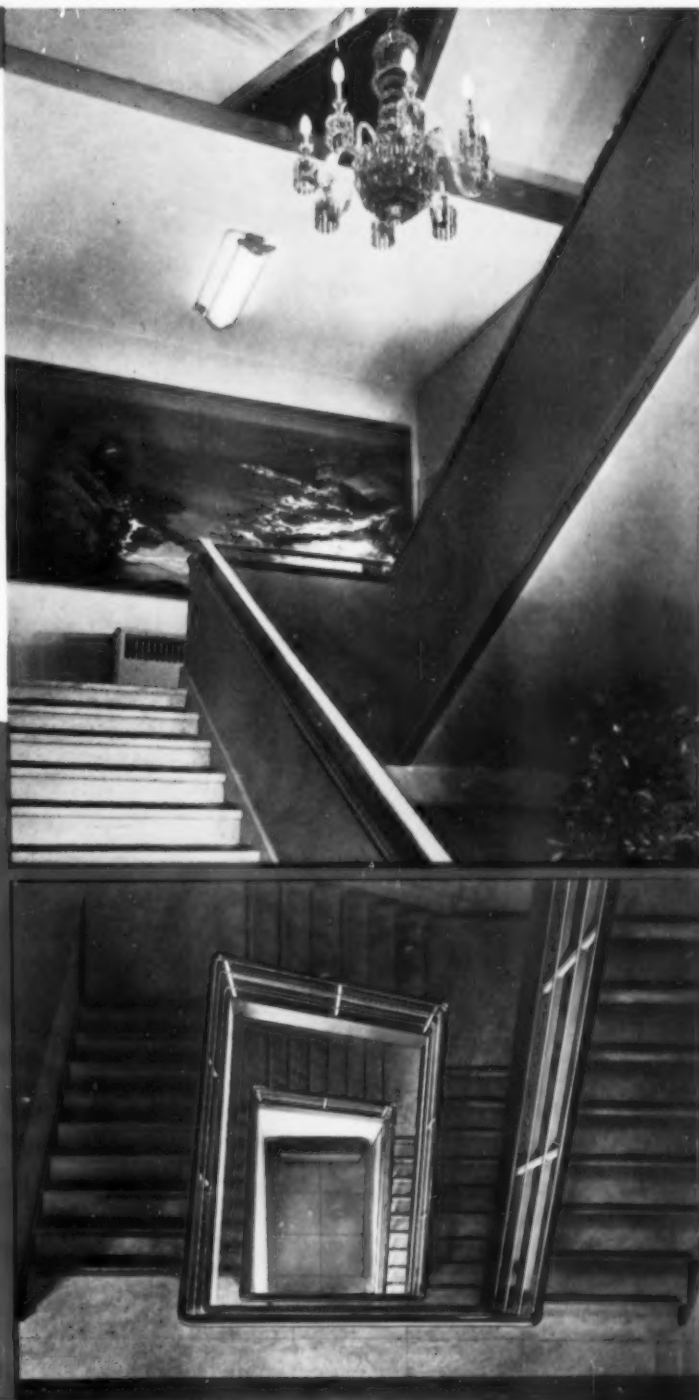
TELEPHONE 67141 (7 lines)



BRABY PRESSED STEEL STAIRS

Braby Pressed Steel Stairs are suitable for internal use for all classes of buildings. They are strong, light and may be easily erected along with the structural framework to give access to the various floors during building operations. Designs and estimates submitted on request. The illustrations show two of the stairs supplied and erected by us at the Store of Messrs. E. Dingle & Co. Ltd., Plymouth.

Architect: Sir John Burnet, Tait & Partners, F.R.I.B.A.
Contractors: Messrs. James Longley & Co. Ltd.



ONE OF THE WIDE RANGE OF

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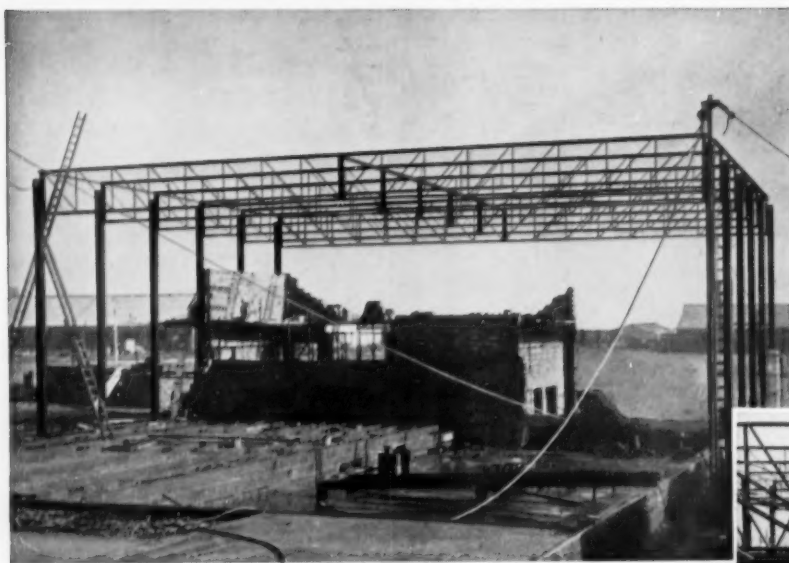
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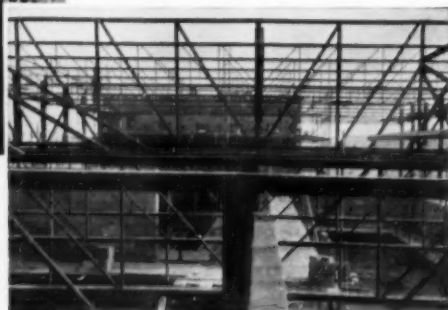
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THE ARCHITECT & BUILDING NEWS

4 November 1954

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BUILDING INDUSTRY STATISTICS

IN anticipation of the ending of the present system of licensing and the making of monthly returns on form C.P.S.23 a new system for obtaining vital statistics has been in operation from October 22. A new M.O.W. form B.C.E/S.R.89 for the return of Labour and Output in the Building and Civil Engineering Contracting sphere will have to be made by all employers by November 6. The information required is for the number of operatives on the payroll in the week ending October 30, and the estimated value of work begun during the three months ending September 30, 1954. The return is required under the Statistics of Trade Act, 1947.

It seems probable that the making of this new return is likely to continue for ever, whatever extent there is of decontrol in other directions. No doubt there is a general dislike of forms and still more opposition on account of the time and trouble involved in obtaining the information needed to fill them in. Doubtless almost all the industry has looked forward to the day when it could do its work untroubled by form filling, but this is not to be; it is important that there should be a minimum amount of information collected since it is of such vital importance to the national economy that simple but basic data relating to the industry is available. The only returns now made that provide satisfactory statistical information are the Ministry of Labour monthly returns of labour employed, which are available from selected firms, and the Board of Trade census, the last of which was made in 1951 and the next of which will not be made until 1955.

The new form which has, it is said, been drawn up by M.O.W. in consultation with representatives of the industry fortunately does not require a great deal of detailed information and should not therefore place a heavy burden on the industry. It is important that the Government of the day should follow closely the trends of investment and employment in order that they may take steps to meet the advent of booms and slumps, neither of which add to the smooth

running of the nation's employment or finances.

In order to lessen still further the burden of form filling on the industry all firms of builders and sub-contractors are being asked to make one return per annum and only a certain number of firms, sufficient to provide a sound statistical assessment, will be asked to make the other three quarterly returns. The builders have only to return the value of their own work as the sub-contractors make their own returns separately. It seems that there will be some discrepancy between the figures returned, as the number of operatives in the return cannot be in direct relationship to the value of the work done during the whole of the quarter; which in any case ends a month before the labour return is computed. It can only be assumed that the M.O.W. statisticians will know how to cope with this.

From time to time attempts have been made to prepare a picture of the building industry over the last 100 years, but little progress can be made with such an evaluation as there is insufficient information available of the grand total of capital investment or of the amount of labour employed for any of the periods before the Ministry of Works started to gather information during the war. From now onwards it may be hoped that a reasonably clear picture will be made available constantly based on the limited amount of information which the industry is asked to continue to supply. The Government, whatever Party is in power, must have an accurate idea of how the building industry is proceeding as it is such a large factor in the fields of investment and employment. It is even more important that there is a full picture of the Capital Investment from the industry as it provides a barometer by which any Government may take steps to ensure full employment, which will always be an aim to be fulfilled.

It is important to remember that the Government directly or indirectly buys some 50 to 60 per cent of the building industry's output at the present time and it is by the variation of this figure that some control on the industry's investment and employment

can be maintained in the interest of the national well-being as a whole.

While doubtless the most probable first reaction to the Ministry's request to make the new return will be that it is a means of providing continuity of employment for the bureaucracy who would otherwise be out of work as the controls fade away, it is to be hoped that on reflection the industry will appreciate that basic statistics are a vital need as an aid to continuing national prosperity. So let the industry accept willingly the provision of the small amount of information now required.

EVENTS

AND COMMENTS

A.A. PRESIDENTIAL ADDRESS

Peter Shepherd, who proved so admirably on the radio a few weeks ago that he can talk about architects and architecture to the public in language which it can understand, enhanced his reputation at the A.A. last week when for his presidential address he spoke on the "Importance of Being Serious." He spoke very well and made it quite clear that he at any rate knows where he stands in relation to his work and furthermore knows where he is going. He commented on his usually worried look by saying that at parties people often come up to him and say "Are you all right?" I would not call him an over-serious or worried person. He works much too hard—nearly all architects do—but since he has such wide interests his overwork is not perhaps the dreary grind that an outsider might consider it. His remark that some architects are so sensitive that they put their buildings on pilosits because they cannot bear the thought of them actually touching the ground deserves to be permanently recorded.

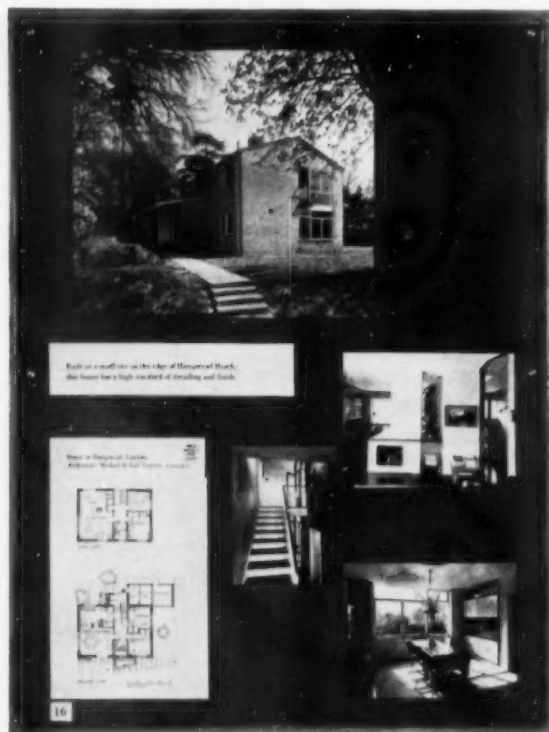
THE A.B.S. BALL

As already announced the Architects' Benevolent Society's Annual Ball will be held this year on Thursday, December 9, at Grosvenor House from 8.30 p.m. until 2 a.m. Tickets, which include supper, are 45s each. The Ball is in aid of the Centenary Fund for Old People's Homes.

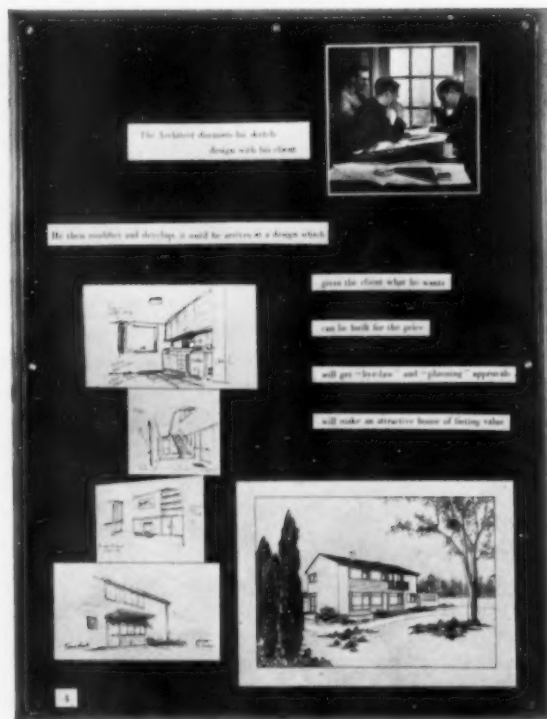
The Ball has become so popular that the Dorchester ballroom could no longer accommodate the numbers wishing to attend and the organizers have therefore removed it to the vast ex-ice rink at Grosvenor House. Decorations in the Egyptian manner are being arranged by five leading London schools of architecture. A poster competition has been held and won by Mr. I. P. Rennie of the Regent Poly. The design of Mr. P. C. K. Clinton, of the A.A. School, was highly commended. As a result of the increased space available there will be more sideshows than usual this year. There is an even handsomer prize-list than last year. Pray order your tickets now and make suitable arrangements with your prettiest partners.

ELECTRIC SIGN COMPETITION

I am one of those vandals who rather like electric signs, provided that they are well designed and not too flagrantly lying. I admit, however, that their appearance by day is often unsatisfactory. I therefore welcome the news



Two panels from the R.I.B.A. Touring Exhibition.



that the Electrical Sign Manufacturers' Association is sponsoring an open competition for the design of a sign for a factory—drawings supplied to competitors. Entries

will be judged on the following points. Advertising value, architectural harmony, contribution to the improvement of electric sign design, daytime appearance, identification and directional value, practicability. You will have noted that these are given in alphabetical order. The assessors are not named but will be "a panel of eminent men representing architectural, town planning and advertising interests."

The closing date for entries is January 31, 1955, and the prizes are 1st £100, 2nd £50, and three of £25.

MORE ABOUT STREET LIGHTING

I have recently seen pictures of two street lighting scheme where lamp-posts were dispensed with and the lanterns were mounted on brackets on the buildings. The first scheme used fluorescent tubes and the lanterns were large and pretentious. In the second scheme tungsten lamps were used in not very beautiful lanterns mounted on flimsy looking brackets. I am assured that both these installations give excellent lighting results. The manufacturers claim that by day the installations are scarcely seen and the street is rid of lamp-posts. The wall-mounted street lamp is not new in itself but the light of whole streets in this way is. I am prepared to believe the manufacturer's claims about lighting but can I believe that the installation is scarcely seen by day?

Presumably to obtain good lighting the lamps must be placed at regular intervals regardless of the façades of buildings, and at the same height above the street regardless of the scale of the buildings to which they are attached. Some architects of my youth used to pull their designs together with a couple of carefully placed bronze lanterns; that was all very well but one borough engineer's bracket lamp in just the wrong place would be quite another thing. In narrow streets the bracket idea may be an alternative to the suspended central light, but for adequately wide streets dog lovers at least will agree that there are worse things than lamp-posts (C.o.I.D. approved, of course).

A SECOND R.I.B.A. TOURING EXHIBITION

This exhibition, entitled "The Architect and You," starts its tour at Luton this month. It consists of 30 panels and explains how the architect designs a house for a private client. It also illustrates some 30 houses in three price ranges: under £2,000, £2,000-£3,500 and over £3,500. The exhibition is very well designed and selected and it is a good idea to leave six blank screens for the use of local Allied Societies in the towns where it is shown. It seems to me to be a great pity that this and other touring exhibitions are not more widely shown in Central London. Large numbers of intending house-builders visit the Building Centre each week to examine materials and equipment and it would be excellent for the profession if they could also see there the advantages of having their house designed by an architect. I have often wondered why the R.I.B.A. does not make more use of the B.C.

BRIXTON SCHOOL OF BUILDING JUBILEE EXHIBITION

Mr. Nigel Birch, the new Minister of Works, is to open the exhibition "Fifty Years of Building Education" at the Building Centre on November 11. We shall all be eager to hear what he says, for it may easily be his first public appearance in his new appointment. I hope, however, that the attraction of a new Minister will not take Press



Portrait of Sir Howard Robertson, M.C., A.R.A., S.A.D.G., P.P.R.I.B.A., by Rodingo Moynihan, C.B.E., A.R.A., which was unveiled at the R.I.B.A. on Tuesday. For President's address see pages 561 and 562.

and public attention from this important and interesting exhibition which he is to open.

LIFE IN A.D. 2,000

Looking ahead is very fashionable just now. A week or two ago we had Pilkington's Soho, now we have the results of the R.S.A. Bi-Centenary Competition. Prizes have been awarded for—among other things—a scheme for roof-top roadways and a system of underground roadways. The authors of these schemes were, appropriately enough, a wing-commander and an engineer from "Down Under." The first and second prizes were not awarded.

UNDER-WATER BALLOONING

A correspondent, Mr. I. Radford, has scolded me for my remarks about under-water ballooning in the Centenary issue. He points out that Professor Piccard's recent exploration of the very deep was carried out in a device which was described as an under-water balloon. His cabin was suspended beneath a container or containers of lighter-than-water liquid. This was valved off to descend, while weights fixed beneath the cabin were released to ascend. It is certain, therefore, that at least one man has overcome the technical difficulties of under-water ballooning. We can only regret that Professor Piccard spends so much of his time en route for the apogee or nadir of physical height that he has no opportunity to pass on to the man in the traffic jam the pleasures of this useful and improving sport.

DEFENSE D'ATERRIR

So prevalent are *soucoupes volantes* in France just now that the Mayor of Châteauneuf du Pope (Pope's Newcastle to you) has found it imperative to forbid them to land within the municipal boundary.

ABNER

NEWS OF THE WEEK

Competition Result All-India Medical Institute

In the second Annual Report of the Consultative Committee on the Colombo Plan for Co-operative Development in South-East Asia mention was made of a Proposed All-India Medical Institute which would make a special feature of Social and Preventive Medicine, and offer facilities for undergraduate and post graduate medical students and research workers who would be drawn from the whole of India. The Government of India is to meet the major share of construction costs estimated at three million pounds, as well as recurring costs, whilst a grant of one million pounds has been voted by the New Zealand Government toward the project.

Implementing the proposal, the Government of India, through the All-India Medical Institute Committee, promoted an Architectural Competition. Mr. Walter George, A.R.C.A., F.R.I.B.A., of New Delhi, and Monsieur Paul Jeanneret, of Chandigarh, were appointed Assessors. From the 43 designs submitted the following awards have been made: First, H. J. Brown, Dipl.Arch., A.R.I.B.A., L. C. Moulin, A.R.I.B.A., in association with A. Heslop Antrum, Dipl.Arch., A.R.I.B.A. (London and Madras). Second, Kavinde and Rai, New Delhi, A./A.R.I.B.A. Third, Parekar Gore and Parpia, A./A.R.I.B.A. (Bombay). Hon. Mention: R. R. Sarma, A.R.I.B.A. (Madras); Prynne, Abbott and Davis (Madras); Gregson, Batley and King, F.F./R.I.B.A. (Bombay).

R.S.I. Membership

The Royal Sanitary Institute announces that in the future Ordinary Membership of the Institute will be open to those who have passed the final and direct final examinations of the Incorporated Society of Auctioneers and Landed Property Agents in the general practice, housing management and agricultural practice divisions.

Membership is also open to those who have passed the examination of the Land Agents' Society.

L.C.C. Building Contracts

As a first step towards the adoption by the Council of the principle of fixed-price tendering, the L.C.C. have announced that they have decided to introduce experimentally for a limited period, subject to review as may be found necessary, a simple system of alternative tendering. For all jobs using orthodox materials where the contract period does not exceed two years, contractors will be invited to tender on two bases: (a) as at present with the fluctuations clause applying to both wages and materials, and (b) with a fluctuations clause applicable to wages only (i.e.,



The B.M.A. War Memorial designed by James Woodford, O.B.E., R.A., and prepared in collaboration with S. Rowland Pierce, F.R.I.B.A., was dedicated by the Archbishop of Canterbury on November 2. Pictured above are the four statues in Portland stone representing Sacrifice, Cure, Prevention and Aspiration.

with fixed prices for materials). Contractors will be free to tender on either or both bases.

The present system (i.e., invitation on basis (a) only) will continue to operate for the time being for works having a contract period in excess of two years and/or jobs involving non-traditional methods of construction where special considerations may arise.

L.M.B.A. Apprenticeship Medals

For the third year running the Lord Mayor presided at the presentation of Apprenticeship Medals, which took place on Friday last in Drapers' Hall. Marshal of the Royal Air Force, Lord Tedder, G.C.B., following the Bishop of London last year and the Duke of Edinburgh in 1952, made the presentations.

In three cases, the silver medals for woodcutting machinists' work, masonry, and measurement of builders' quantities, no award was recommended as in the opinion of the panel of judges the work did not justify it. Winners were as follows: Carpentry and Joinery: Silver: Frederick Shanks (Compactom, Ltd., and Hammersmith School of Building). Bronze: Paul Rex Dobson (H. C. Leach, Ltd., and Enfield Technical College). Woodcutting Machinists' Work: Bronze: John Hamilton Read (R. Cattle, Ltd., and Willesden Technical College). Brickwork: Silver: Peter Charles Fawcett (Richard Costain, Ltd., and Tottenham Technical College). Bronze: James Reginald Mason (Higgs & Hill, Ltd., and Brixton School of Building). Masonry: Bronze: Edwin George Belcher (Albion Stone Works and Brixton School of Building). Plasterers' Work: Silver: Peter Edmund Hutton (John Kent (London), Ltd., and Willesden Technical College); Donald Humphrey Taylor (James Walker (AD), Ltd., and Willesden Technical College). Bronze: Roy George Wells (W. G. Venn & Sons, Ltd., and Willesden Technical College). Painters' and Decorators' Work:

Silver: John Richard Graysmark (Keeble, Ltd., and Willesden Technical College). Bronze: Brian George Thomas Day (Hall, Beddall & Co., Ltd., and Willesden Technical College). Plumbers' Work: Silver: John Stewart Barrow (Treasure Bros., Ltd., and Bromley College of Art). Bronze: Douglas Henry Ratcliff (James Webb & Son, Ltd., and Willesden Technical College). Builders' Quantities: Silver (Analysis of Quantities for Pricing): Kenneth Bryan Jones (A. Roberts & Co., Ltd., and Woolwich Polytechnic). Bronze: George Charles Pigram (Trussed Concrete Steel Co., Ltd., and South-East Essex Technical College). The Silver Medal is awarded in the Final Examination in each subject, the Bronze Medal in the Intermediate.

COMING EVENTS

The Architectural Association

November 10 at 6.15 p.m. Informal Illustrated Talk, "Three Polish Cities, Warsaw, Cracow and Gdansk," by D. M. Gregory Jones, at 36 Bedford Square, W.C.1.

London Master Builders' Association

November 10 at 2 p.m. General Meeting of Area No. 1. Discussion on the London Working Rule Agreement. The meeting will be attended by N. S. Farrow, M.B.E., Chairman of the Association's Working Rule Agreements Committee, and R. E. Stenning, M.A., Secretary of the Association, at Derry & Tom's Restaurant, Kensington High Street, W.8.

The Royal Sanitary Institute

November 10. Exhibition on Single Stack Drainage, at the Royal Sanitary Institute, 90 Buckingham Palace Road, S.W.1, to be opened by Ernest Marples, M.P.

The Institution of Structural Engineers

November 12 at 6 p.m. Combined meeting with the Institution of Civil Engineers. Talk on "Unusual Industrial Structures," by H. C. Husband, at the University of Bristol Geology Lecture Theatre.

IN PARLIAMENT

Freed from Requisition

The Minister of Works informed Sir Thomas Moore that during the past three years Government departments had derequisitioned 733 residential premises and 1,858 other holdings, compared with 2,855 and 2,966 during the previous three years before this Government took office. Sir Thomas Moore commented that these figures obviously could not give a correct picture and asked for the relative percentages. Mr. Birch replied to this that during the past three years 70.5 per cent of outstanding requisitioned properties had been freed, compared with 53 per cent. "We are de-requisitioning nearly half as fast again as under the previous Government," he said. (Oct. 26.)

The Minister of Works stated in answer to another question that the number of private houses still held under requisition was approximately 64,500. Releases in the past three years were about 22,200. (Oct. 27.)

Government Contracts

Mr. P. Wells asked the Minister of Works if, in view of the Monopoly Commission's report, he would insist on tenderers for Government building contracts signing the declaration of non-collusion, as recommended by the R.I.B.A. Mr. Birch replied that while the discussions which he mentioned the previous week were taking place he did not propose to alter the declaration now in use. Mr. Wells said the reply would give great disappointment to the Kent County Council and many other local authorities, who felt the Minister was dragging his feet about this. Mr. Birch said he would make a statement as soon as he could. (Oct. 26.)

Floating Floors Complaint

Mr. D. Chapman, who represents the Northfield division of Birmingham, criticized the floating floor design used on the Egghill housing estate, Birmingham, in questions to Mr. J. R. Bevens, Parliamentary Secretary to the Ministry of Works, who speaks in the Commons for the Lord President of the Council.

Mr. Chapman wanted to know how many local authorities had been advised by the Building Research Station to use these floors, which he said had been proved at Egghill to be useless in soundproofing, to sink away from the walls, and to slope; what advice the Research Station was giving the Birmingham City Council about removal or reconstruction of the floors that had been used on its recommendation, and whether the Minister would offer to meet the cost.

Mr. Bevens stated that in 1950 the Building Research Station published particulars of a timber floor giving improved sound insulation, and many of

these floors had been used in flats constructed for local authorities. An alternative had recently been devised which gives better insulation but at increased cost. The only complaint received had been from Birmingham and a member of the Building Research Station was looking into the matter immediately.

Mr. Chapman asserted that the floors sagged, that as you walked across them the furniture danced towards you with the vibration, and that you could hear everything going on in the flats below. How came the Building Research Station to recommend such floors, and would the Minister make some contribution to the heavy cost? Mr. Bevens suggested that they should await the result of the investigation. This was the first complaint in the whole country. It might well prove that the floors had been wrongly laid.

Mr. Chapman said the majority leader on the Birmingham City Council had stated that the floors had been built strictly to the specification of the Research Station. In these circumstances there should surely be some contribution towards the cost of taking them away. Mr. Bevens said the right thing was to examine the matter. The Birmingham city architect must have thought the design was a good one, otherwise it would not have been adopted. (Oct. 26.)

Atomic Construction Work

The Minister of Works announced that on Dec. 1 the Atomic Energy Authority would assume direct responsibility for new construction in the industrial group, which was controlled from Risley. Arrangements were also being made for the authority to take over responsibility for the maintenance of their buildings other than the London headquarters offices. The Ministry of Works would continue for the time being to be responsible for new construction in the research and weapons groups. Mr. G. R. Strauss, former Labour Minister of Supply, criticized the decision, because the Ministry of Works had previously done all this building work for the Atomic Energy Authority exceedingly well. Mr. Birch agreed that this was so, but said that all nationalized bodies did their own building. Mr. Strauss—Does that mean that they do their own construction, and have their own construction companies; or will the authority invite contractors other than the Ministry of Works to submit estimates? Mr. Birch said it would be for them to select their own contractors and carry out the work in the way they think it ought to be done. Mr. Strauss said it would be ridiculous if the Ministry of Works were no longer to be invited to submit estimates. Mr. Birch replied that that was a matter for the Atomic Energy Commission (Oct. 26.)

House Purchases and Sales

Mr. Sandys, Minister of Housing and Local Government, informed Mr. Dodds that in the past two years 235 local authorities in England and 12 in Wales had exercised their powers to sell council houses, of which about 2,440 had been sold. Out of the 1,531 housing authorities in England and Wales 621 had so far decided to operate the guarantee schemes suggested for use under the 1949 Housing Act, and 31 had stated that they were unwilling to do so. (Oct. 26.)

Speedier Preliminaries

Mr. Hannan suggested to the Secretary of State for Scotland that the establishment of a separate branch of the education department in which architects, administrators and inspectors would work together as a team to co-ordinate the efforts of local authorities would produce quicker approval of school building projects. Mr. Henderson Stewart, Under Secretary, replied that there was already such a branch to give general guidance to authorities. Quicker approval of projects was normally obtained by informal consultation between the architects, and in some areas a joint working party had been set up by the department and the education authority to keep the building programme under frequent review. These arrangements were working reasonably well, and it was not proposed to change them. Mr. Hannan spoke of irritating and frustrating delays resulting from plans being passed backwards and forwards between Government departments, and local authorities, on which Mr. Stewart commented that endeavours were being made all the time to cut down unnecessary red tape. (Oct. 26.)

Bricks from Fuel Dust

Mr. Dodds asked Mr. Bevens for a statement giving details of the experiments at the Building Research Station in making bricks from the fine ash left after burning the pulverized fuel at power stations.

Mr. Bevens said the Research Station, in collaboration with the British Electricity Authority, had been conducting experiments which had shown that good quality bricks could be made from mixtures of 85 per cent pulverized fuel ash and 15 per cent clay. The Station had also worked out details of the practical application of this process. The ash necessarily contained small amounts of unburnt coal which burned in the firing processes, producing heat and thus reducing the amount of fuel needed to fire the bricks. (Oct. 29.)

Air Pollution Report

The Minister of Housing and Local Government, asked by Mr. Dodds for a statement on the progress made by the committee on air pollution, said he understood that they had nearly completed their final report. (Oct. 26.)

CORRESPONDENCE

The Module

To the Editor of A. & B. N.

Sir,—I do not want to open a long correspondence through your columns with Mr. Hartland Thomas but I would like to make an observation on his letter concerning my remarks on modular co-ordination.

To assume an answer to the problem, as suggested in the second paragraph of Mr. Hartland Thomas' letter, to encourage a wide use of the assumption and then to set out to prove that the assumption is correct is a very doubtful method for the solution; such a method is statistically valueless and to work in this way might prove to be a quack remedy for co-ordination of building products.

I agree with the third paragraph of Mr. Hartland Thomas' letter that it is important to use the right type of research for each problem. Consequently I also do not want a "white-coated and test-tube" type of research nor do I want an "operational research" alone. What is essential is a full examination of all the factors involved, and of possible answers, in order to be sure that the method of co-ordination recommended has not overlooked any aspect of importance. For example, to base decisions of such magnitude on the results of building "several hundred

partial modular buildings," probably based on prefabricated buildings using a 4in module, will not be very convincing evidence to those who have advocated a 3in module, nor to those who seek an assurance that traditional materials will continue to be used.

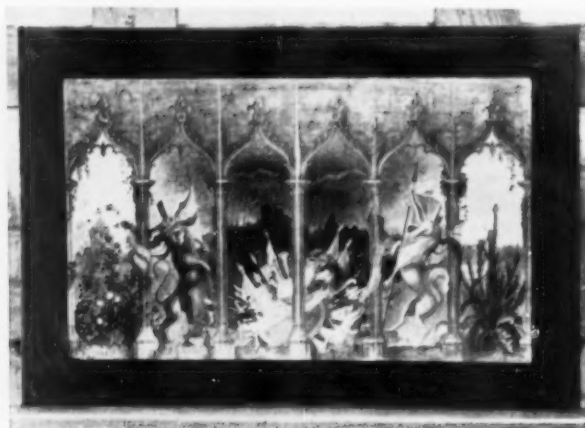
Above all, however, I suggest that it is essential to proceed slowly and with great caution to be certain that each decision is correct from all aspects so that there will not be later retreats

from earlier recommendations. The effect of recommendations which are accepted by industry and which might have to be changed later would cause great inconvenience and waste of money and capital equipment and might kill completely the efforts of all those concerned with the achievement of better co-ordination.

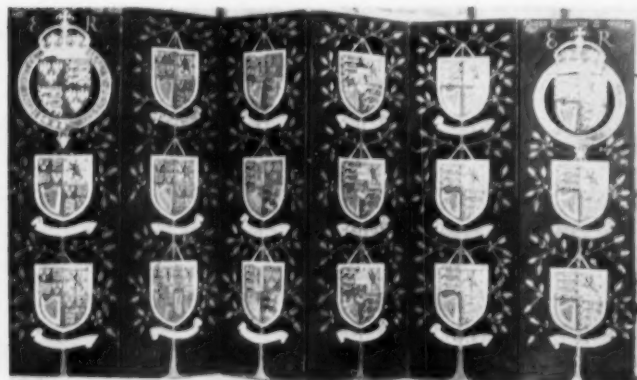
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"DUTCH UNCLE."

Screens
for British
Embassies
Competition
Winning
Designs



Design by George Oakes



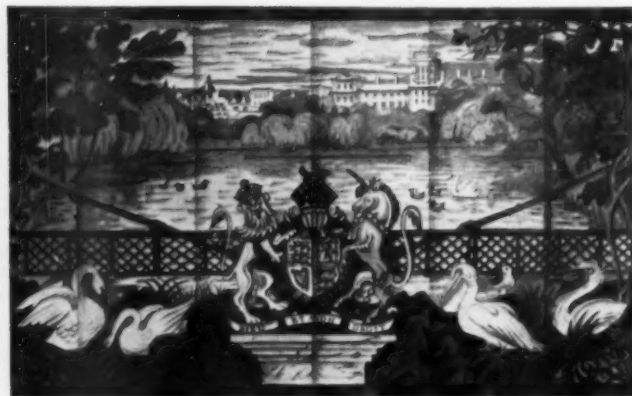
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R.I.B.A. MEETING NOVEMBER 2

The President's Inaugural Address

C. H. ASLIN, C.B.E.



I HOPE that my friends and guests who are not members of the profession will be good enough to bear with me for a little time because, rather than give you an amusing, informative, or scholarly talk on some form of architecture, I wish to touch on a number of matters which have exercised the interest of all our members for some little time. Before I begin, however, I should like to take the opportunity to refer to my indebtedness to a large number of people. I owe a tremendous debt, which can never be repaid, but which can at least be acknowledged, to my colleagues in this Institute; my own staff in the office I have the honour to control, and to the staff of the R.I.B.A. without all of whom no President could last of his own volition more than a few moments.

The importance of each item in my talk is not indicated by the order in which it is dealt with, and I need hardly say that the views expressed are my own, and do not necessarily represent the opinions of the Council or general body of members.

You may know that recently we have been concerned with a movement either to give the Royal Institute the character of a trade union, or to form such a union under the wing of the Institute, leaving the Institute to exercise its ancient function as a learned society. The feeling was said to be so strong that the Council caused a questionnaire to be sent out to all members and students. The question "Do you wish to have a trade union able to look after your financial and others interests" was answered by a comparatively small proportion in the affirmative. The problem of setting up such a body within the framework of the R.I.B.A. is obviously very difficult, and not the least of the difficulties is the fact that the Royal Institute is made up of members who are employers and large numbers of others who are employees. If we are not careful we should have an organization which supported one section of members to the disadvantage of the others, and before long we might indeed have a variety of organizations in some sense antagonistic to each other formed within the R.I.B.A.

There seems to me to be every reason why such a body should not be set up, but on the other hand it seems logical to suppose that a body which has, for many years, fixed the remuneration due to private architects, should at the same time have some machinery which could consider in relation to the Scale of Fees the salaries of members who may never become private practising architects, and I think it is on these lines that the problem might be approached. You might say that this is a long-term policy. I think it should be, whatever methods are adopted; and I am quite certain that none can produce quick results. I think it was Francis Bacon who said "I hold every man a debtor to his profession," and that statement is certainly true in connection with the profession of architecture, and whereas we should all support the view that the architect should be reasonably paid, I think it to be eminently true that the first charge on the architect is his adherence to the profession which he serves. In short, I believe that the suggestion that any form of trade union should be set up, whose sole concern is with

the remuneration of the architect, is a bad one: the matter should be approached from a much wider angle, and in such a way that a learned society can properly look after its members without in any way detracting from its proper functions.

The next item of interest, which is at this moment being investigated by a strong committee, is the most important matter of education in the profession.

The pattern has changed completely in the past 50 years. At the beginning of the century, by far the greater proportion of work in this country was carried out by private architects for private individuals and organizations. It is true that at that date local government organizations had authority to build a variety of structures such as schools, markets, tramway depots, and other buildings connected with the requirements of the various operations for which those authorities were responsible. The first large-scale building for which local authorities were responsible was housing, and since 1919 the volume of work which they have had to undertake has increased. This added responsibility was further enlarged by the 1944 Education Act, which increased not only the volume of work permissible, but enormously increased the volume which they were compelled to do by an Act of Parliament. The effect of this has been to produce a programme which could be carried out either by architects in private practice, or in departments set up by local authorities. The bulk of authorities have elected to carry out the work by the latter method, though a number of them have, in addition, provided commissions for private practitioners. What all this means to the profession is that whereas at the beginning of the century by far the greatest part of all commissions was undertaken by private practitioners, at the present time the position is becoming reversed; indeed 50 years ago the profession was roughly divided into two parts, viz.: qualified architects who carried on practices, and a large number of people who were known as architectural assistants, whose knowledge was gained by practice, and who, having no prospects of becoming practitioners in their own right, were content to accept posts as assistants to architects, with no thought of doing anything else. The position now, however, is vastly different, and all young architects enter the profession fully qualified by examination. They are able to act in their various degrees as fully qualified members of the profession from the moment they go into an office. Their training and ability are naturally quite different from those of persons in the past who were content to act as assistants to qualified architects. This fact creates a new problem in the profession as to how they should be remunerated. It is quite clear that none but a small proportion of the architects who enter local government service can hope to attain the better and more responsible posts, and it is equally clear that by virtue of their training and qualities they ought to be paid at a higher rate than that which has, in the past, been offered to the assistant working solely under the direction of qualified architects. Some method must be discovered of properly rewarding architects in this new pattern. It is generally accepted that nothing is permanent,

The President's Inaugural Address

but this pattern appears to have come to stay, because we are now living in a community which is largely controlled by a central government, and it is difficult to believe that in a reasonably short space of time we shall get back into an economy which is largely controlled by private enterprise.

You might think that all this has little to do with architectural education, but I think you will agree that the method which was largely in force 50 years ago will not do under present conditions. In the past, most architects who were trained were articled to practising architects. They grew up, as it were, and had no formal intellectual training. This pattern gradually gave way to training in schools of architecture some of which are attached to Universities, and at the present moment there are 43 of these at home and in the Commonwealth, recognized by the Royal Institute. The result is that, though highly imaginative training is given to the student, and he is, I believe, better equipped to carry out his duties than the student trained in an office, he is lamentably out of touch with practical building. I believe we have gone to the other end of the scale, and that some method must be found of combining the practical experience which the former pupil obtained, with the theoretical training the student now obtains at his School of Architecture. I am not suggesting a remedy, but merely pointing out that the time has come for a deep consideration of this problem, and indeed you will be aware that the matter is already receiving the attention of the Royal Institute.

I am happy to say that the profession is also changing to a pattern which shows a much closer collaboration with all the other people concerned with the building industry. It might well be that the architect could, during his training, share some part of the curriculum with the builder. It is not, I suggest, outside the bounds of possibility that in some suitable universities we might have faculties of building and courses which would be attended both by architects and the senior builders. By senior builders I mean those who will take up executive posts in building firms.

The next matter which I need only mention, is that a proposal has been made recently to reorganize the membership of the Council. It is quite true that as time goes on there is a necessity in ancient institutions to have an enquiry into procedure which may have served well in the past, but which possibly needs some reorganization to meet the changed circumstances of the present. I, personally, can see little wrong with the methods which are used to elect the Council, but I am quite sure there is nothing, if members feel strongly about it, to prevent a re-examination of the problem which may lead to a solution to give greater satisfaction to the majority of members.

The other matter upon which I wish to touch is, for want of a better word, prefabrication, and this subject, fortunately, may have some interest to those members of my audience who are not architects. By prefabrication I mean the production of standard units of building such as walls, bases, doors, windows, wall blocks, roof blocks, and indeed anything which can be made in a factory: I do not mean the production of whole units of buildings such as sheds, houses, schoolrooms, etc., sold as a standard answer to any given problem. Some members of the profession still think that the idea of factory-made components after the war had no object beyond obtaining a quick solution to some of our building problems. I believe, however, that it is a natural development of the machine age in which we live, and I further think that architecture can be produced by this method. In 1945-46 it was almost an impossibility to find prefabricated units, or to induce manufacturers to make them, and indeed to find builders who would assemble them. Since that date the idea has made much progress. These

methods are being used in all the countries on the Continent, and there are modular societies whose membership includes architects, interested in this method all over the world. It may to some appear as an expedient arising out of the difficulties in which we found ourselves immediately after the war, but experience seems to show that it is a matter which will not only endure, but will expand. Those people who are not in sympathy with this approach to present-day architecture are inclined to imagine that tradition stopped with the normal methods of building with bricks, stone, and reinforced concrete *in situ*, and tradition is only carried on by using the same methods as in the past. My view, however, is that this method is a tradition continuing from the past, and in spite of the danger of prophecy, I suggest that it may well be the appropriate method of a machine age of production. Up to the moment it has only been fostered by local authorities with large and continuing programmes, but I believe that before long we shall have so many manufacturers making components that it will be quite simple for an individual architect with an individual job to use any of these materials which will be manufactured for sale, either in large or small quantities, after they have been established by the large buyer. In other words, I think it has taken too strong a hold to be dislodged, and it is an unwise thing for those people who think it is a passing phase to wait for the time, which I think will never come, when a return can be made from this excursion to bricks, and stone, and mortar. One thing which I am sure will prevent it is the changed outlook on design. In the not very recent past some architects designed from outside, inwards. They built in a pattern in what was then considered to be an appropriate manner, and fitted in the rooms which they hoped would satisfy the inhabitants: though, if they did not, it was of less importance to them than that the structure as a whole should present an imposing pattern. The method nowadays, which is being more and more accepted, is that the architect should supply his client's needs, whether for a house, school, factory, or any other building, and having satisfied that demand he must produce a structure of architectural quality. One of the things which, in my opinion, is bound to provide the appropriate answer is that we are getting much greater co-operation between the client, architect, and engineer, and indeed with everyone concerned with the building, than we did formerly. It is some satisfaction to know that judging by the comments of our fellow architects from abroad, we, in this country, are leading the way in this matter, and I may be allowed to express the hope that we shall long continue to do so, though, of course, we are delighted that many other countries are pursuing the same course, and will naturally have important contributions to make.

From most of this address it might appear, especially to those members of the audience who are not in the profession, that the Royal Institute is largely concerned with all kinds of problems which personally affect the architect, and do not necessarily impinge on architecture. I can, however, assure them that members of this profession are primarily interested in architecture rather than the conditions under which they work, or the salaries which they enjoy. I think it is significant that Her Majesty the Queen is the Patron of our Royal Institute, and you will all remember the remarkable vows of dedication which Her Majesty made on her Accession. I am sure you will not think it an impertinence if I say that all architects are dedicated to architecture. In this country we have a long tradition of great architecture over the ages, and I may be allowed to express the belief that the modern architect will serve architecture and its patrons as well as his illustrious forebears did in the past.



**Offices
for
Costain Ltd.**

architect: R. N. WAKELIN, F.R.I.B.A., of Campbell Jones & Sons

assistant in charge: B. F. MOSS

THE clients requirements in the new head offices of Richard Costain Ltd. at 111 Westminster Bridge Road, S.E.1, were accommodation for the headquarters organization of the Group of Companies, including a canteen, kitchens, house-keeper's quarters and a Director's suite. The site, 130ft square, an area of 17,000 sq. ft. is near to Waterloo Main Line and Suburban stations, Lambeth North underground railway station, and many bus services.

The building was originally designed with load-bearing brick columns which required relatively low blocks. The plan is arranged round the perimeter of the site with a front block of six storeys, South, North and rear wings of four storeys all connected by internal corridors running in the centre of each block.

An attempt was made at the outset to reduce the "wet" trades and to fabricate as much as possible away from the site. With the use of precast terrazzo w.c. partitions, stair treads and risers, floor tiles and window sills and dry construction Gypunit office and corridor partitions together with the precast concrete external wall panels, a definite advantage was obtained and contributed considerably to the speed of completion. In the main construction, the use of prestressed Stahlton planks for floors requiring the minimum of support and shuttering contributed in a similar degree. The work was commenced in June, 1953, and the building completed and occupied in September, 1954.

Sir Richard Costain, C.B.E., was asked "what does it feel like when a contractor builds his own headquarters?" and his reply is overleaf.

Offices for Costain Ltd.

Sir Richard Costain writes:

"Yes, of course, there is the predominant thrill of building for one's own use and enjoyment, but here we are attempting to give evidence of methods of wider, and we believe keen, interest to all who require constructional work.

Much has been said, much has been written on the basic rightness, and the beneficial results to be achieved, if and when building owners, designers and constructors are a selected team formed at the very birth of the project and not a bunch of strangers strung together by a succession of extraneous conditions.

In the recent completion of our own head offices, which involved construction work of some quarter of a million pounds, these so oft advised but seldom realized conditions were achieved.

To carry out a job under these terms as opposed to those which exist in the majority of construction contracts is an inspiring experience and the effects are not confined to the major factors, which we shall refer to later, but permeate indefinitely into many much more minor facets of the overall task of building a building, which are:

1. What the building owner wants and needs,
2. Of an appearance most suited to him, the site, the authorities concerned and in the general public's interest,
3. Of the most efficient and economic form of construction, and
4. Carried through in the minimum time.

Our new offices are the third job which we have carried out in the recent past under these same circumstances and it may be pertinent if we say that our considered views are that the practical benefits which can be made to accrue are best illustrated by our contention that a building so constructed by us costs approximately ten per cent less than a similar one carried out on what are regarded as "normal conditions." These remarks are particularly applicable to large contracts which permit particular scope for design and forward planning.

The principal tangible factors which bring about this very material difference are not something magical but, as we have already said, matters which are well known, much lauded, but seldom put into practice.

(In the following paragraphs, for the sake of brevity we are using the initials N.C. to refer to a set of normal contract conditions and the initials O.D.C. to refer to a set of conditions where the owner, designers, and contractors are formed into a productive unit at the outset.)

Under N.C. the reader will be well aware of the method of tendering on drawings and Bills of Quantities. These circumstances, of course, mean that he has had no opportunity to really consider the construction work involved,

to plan his method of going to work, to select and make arrangements to make available his most suitable staff for this particular type of construction, to discuss with designers problems arising out of any particular special type of construction, to plan the best use of plant available compatible with the design of the building. (In the particular case of the offices under discussion, the architect deliberately designed the exterior structure to suit the modern type of tower crane that the contractor had available.) The most urgent request he receives is "get started on the site" and too often, some, if not many, of these considerations of prime and basic importance are thrown overboard on that account.

Against these, under O.D.C. conditions, the owner, the designer and the constructor come together to consider the problem before even a line is put on paper. The eventual solution, in the form of complete working drawings, approved by the owner and all the necessary authorities is then the considered and co-ordinated experience of all parties involved in the completion of the finished article. As constructors we are able to provide the benefit either from our own organization or from professional or business associates with whom we have a thoroughly technical and administrative understanding of a large number of specialist services such as soil investigation, foundation design, reinforced concrete design, steel design, constructional detail and architectural detail drawing office facilities, plant facilities, precast concrete manufacturing facilities, specialist flooring construction facilities, plumbing design and installation, electrical design and installation, plastering and special finishing, etc. It means that the constructor at this stage is fully apprised of all the requirements of the job, is aware of the date intended for commencement of the works on site, is, therefore, able to pre-plan his method of erection and construction, to select and make available a suitable team of staff men covering not only an agent or general foreman but the trades foremen and followers who play such an important part in fostering the real team spirit on the site. He is able to discuss and plan with any mutually selected sub-contractors the marrying-in of their part of the work with that of the whole.

As the client and contractor are one and the same body, they are fully aware of the enormous increase in cost that is involved when the client changes his mind. On this contract it is interesting to reflect that all the board members avoided visiting the site or giving instructions that involved any alteration to the general layout or design of the building.

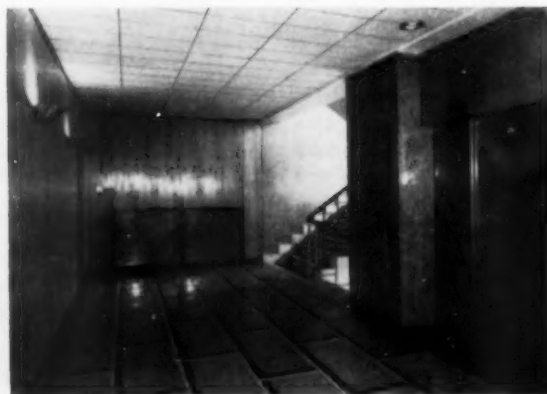
It will be seen the keys are:—

1. Teamwork from top to bottom and start to finish.
2. Full detailed knowledge by all as to what they are producing.
3. Freedom and flexibility for quick action to meet emergencies encountered during the construction period."

[Continued on page 568]

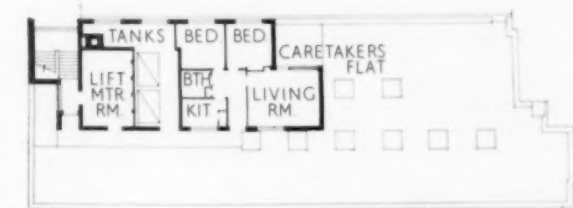


Main staircase from reception area.

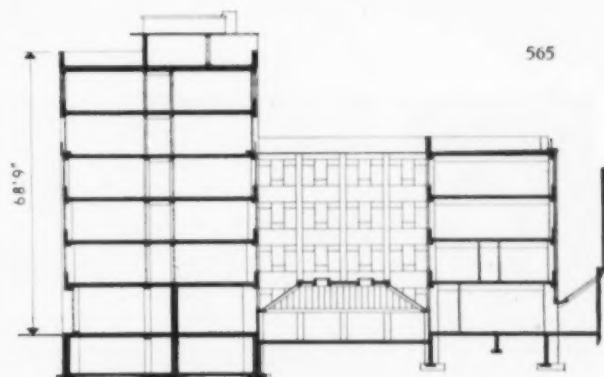


Typical staircase landing.

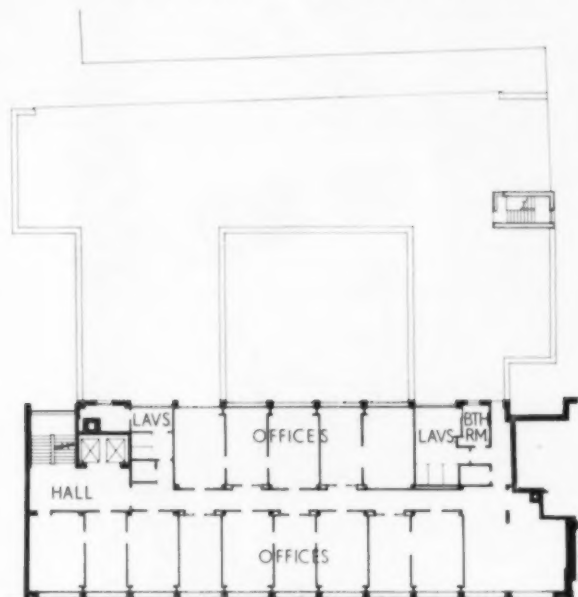
PLANS AND SECTION. Scale: 1 in = 40 ft.



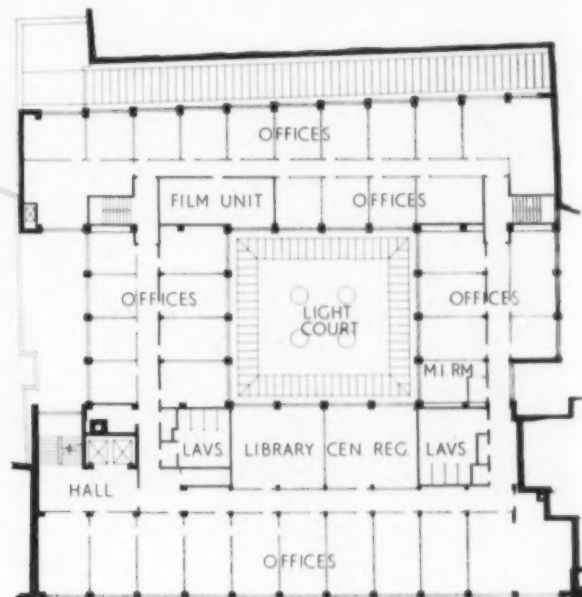
SIXTH FLOOR, CARETAKER'S FLAT



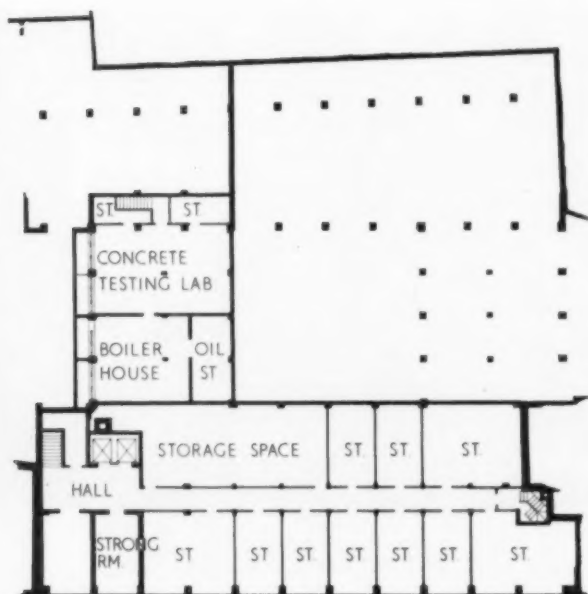
TYPICAL SECTION



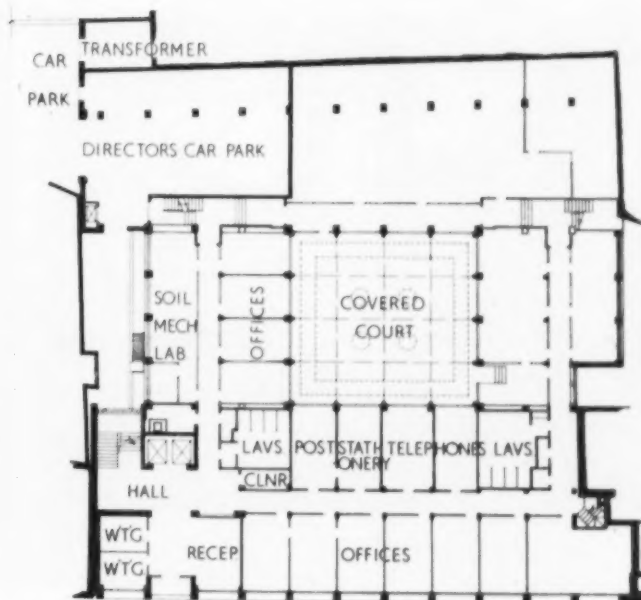
FOURTH AND FIFTH FLOORS



TYPICAL OF FIRST TO THIRD FLOORS

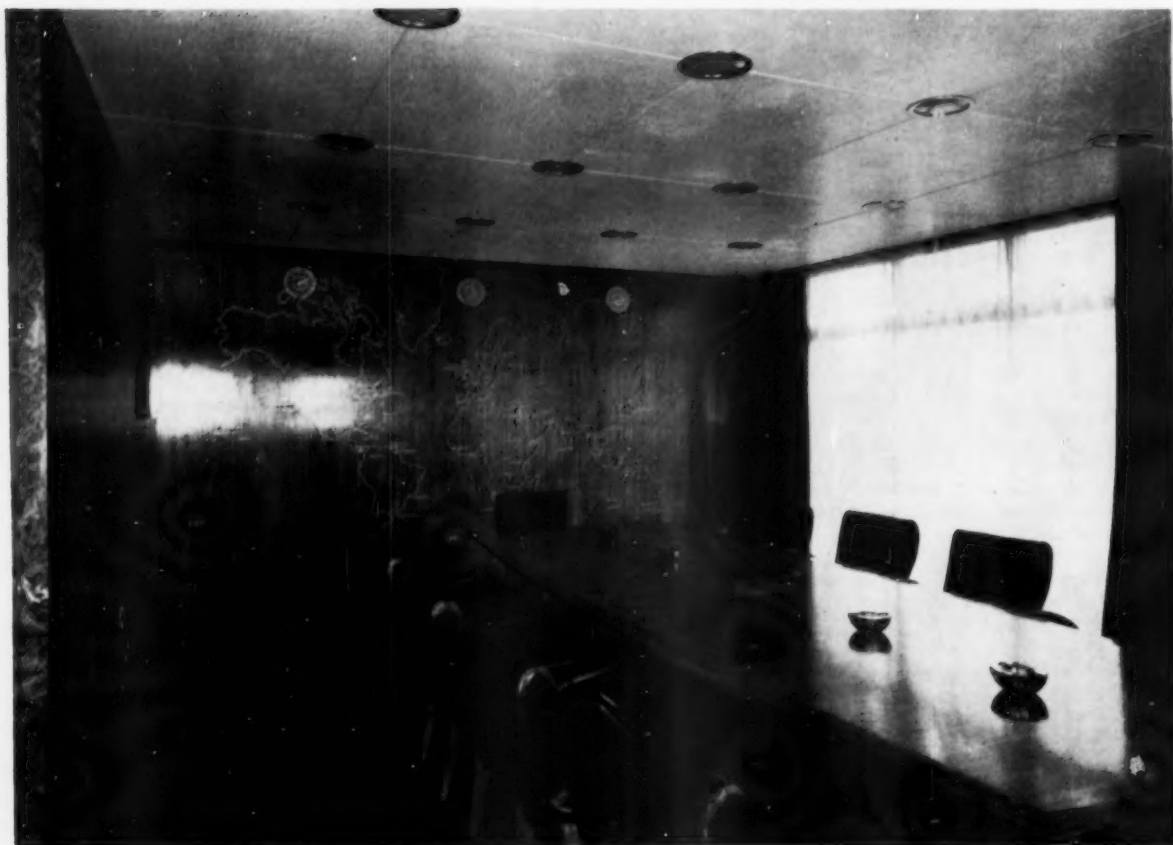


BASEMENT



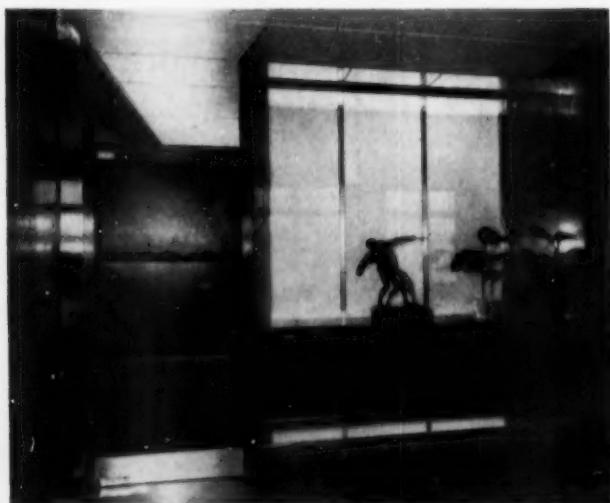
ENTRANCE

GROUND FLOOR



The Boardroom on the fourth floor. The internal finishes and fittings were designed by Frank Booth, A.R.I.B.A. and the work executed by Messrs. Heal's Contracts.

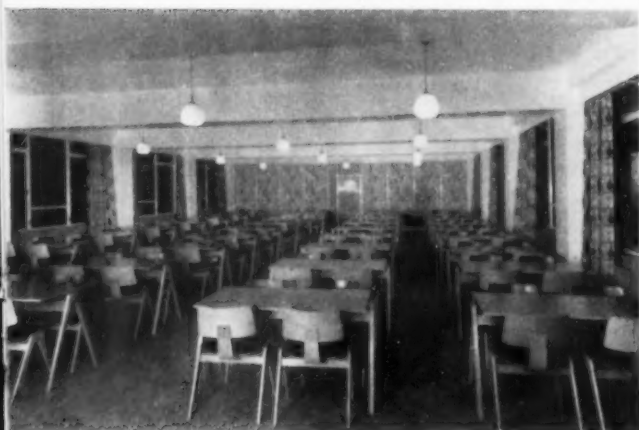
Office for Costain Ltd.



Boardroom door detail



The Chairman's office



Canteen



Accounts Office

The mural painting in the Overseas Staff Lounge is by Miss Mary Adshead and is described as an "Architectural Vista." It is carried out in oil paint with a wax medium on prepared block board fixed to battens, and the joins are integrated into the design.



Offices for Costain, Ltd.

Planning

Access to the premises is from Westminster Bridge Road together with a service and vehicle access from Newnham Terrace at the rear.

The boiler house is placed in the basement of the south wing together with a concrete testing laboratory. A soil mechanics laboratory is on the ground floor and on the first floor provision is made for four conference rooms each divided by sliding and folding doors which, when opened, give sufficient space for a small cinema. General storage accommodation occupies the basement of the front block.

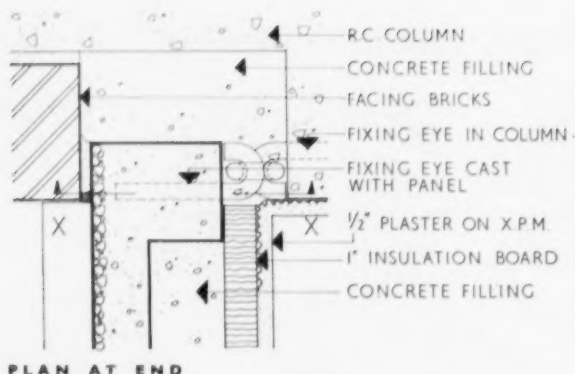
The large central area formed by the four blocks is roofed over at first-floor level to form an accounts office on the ground floor. The roof is supported on cranked beams linked with a reinforced concrete gutter and columns. The gutter forms a ring beam and the whole structure is independent of the main construction.

The ground-floor level of the central area and the rear block (which is also accounts dept.) is 2ft below the general floor level and allows clerestorey lighting above the gutter beam to serve the ground-floor offices around the central area. Additional lighting is obtained by the use of glass bricks below the gutter beam.

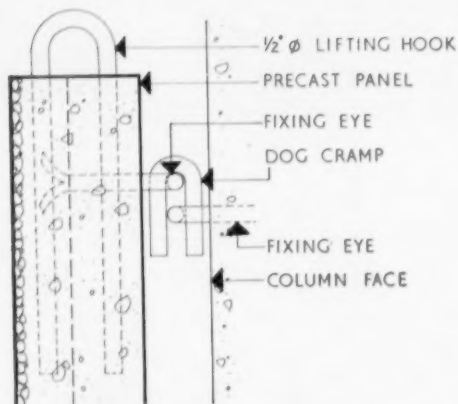
The first, second and third floors form the general office accommodation except for the rear wing at third floor which contains kitchen, canteen and lounge for overseas staff.

The directors' suit together with the board room is on the fourth floor.

Other accommodation provided includes medical inspection room, small library, barber's shop and car park.



PLAN AT END

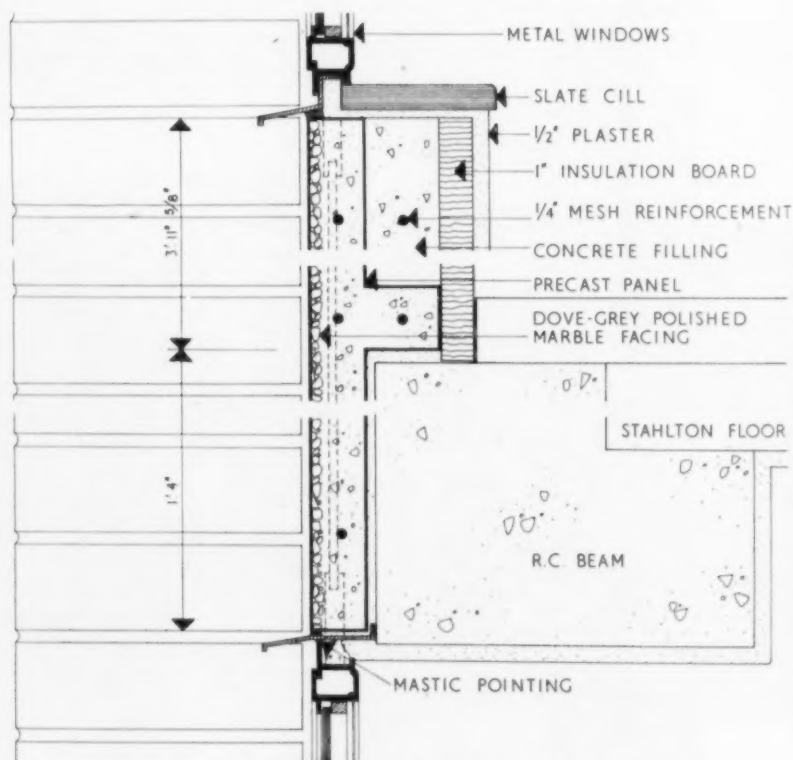


SECTION, SCALE: 1 in = 5 in

SPANDRIL DETAILS

Subcontractors:—

Acoustic Ceilings: Macallum, Ltd. Asphalt Roofing: Permanite, Ltd. Board Room: Heals (Contracts), Ltd. Bricks—facings: Proctor & Lavender. Canteen and Staff Lounge Furniture: Hille London, Ltd. Cast Stonework: Atlas Stone Company, Ltd. Directors' Furniture and Carpets: Storey & Co., Ltd. Doors: Jayanbee, Ltd. Doors (Zincproof) and Veneered Panelling: Adams & Co., Ltd. Electrical: R. Costain, Ltd. Electrical Fittings: G.E.C., Ltd.; Merchant Adventurers. Floor Finish: E. J. Elgood, Ltd. Glazing: E. A. Heatherington, Ltd. Gypunit Partitions: Gyproc Products, Ltd. Heating and Ventilation: Young Austin & Young. Internal Automatic Telephone System: Communication Systems, Ltd. Ironmongery: Pryke & Palmer, Ltd. Joinery: R. Costain, Ltd.; Canterbury; Kings (B. D. J.), Ltd.; Kingston. Kitchen Equipment: Lorkhart Equipment, Ltd. Lettering and Signs: The Lettering Centre. Marble Linings, Natural Stone: Fenning & Co., Ltd. Passenger Lifts: Hammond & Champness, Ltd. Patent Glazing: Mellowes & Co., Ltd. Plumbing: R. Costain, Ltd. Postal Chute: Nash & Hull, Ltd. Pre-cast Terrazzo Spandril Panels, Terrazzo Stairs, Floors and Partitions: St. James's Tile Co., Ltd. R.C. Frame: R. Costain, Ltd. Reception Desk: Keeble, Ltd. Roller Shutters and Gates: Dennison Kett & Co., Ltd. Sanitary Fittings: John Bolding, Ltd. Service Lifts: Express Lift Co., Ltd. Staircase Balustrades: H. H. Martyn, Ltd.; H. & C. Davis. Staircase and Lavatory Wall Finishes: John Ellis & Sons, Ltd. Sliding Door Gear: E. Hill Aldam. Special Pavings: Neolite, Ltd. Structural Floors: Costain Concrete Co., Ltd. Waterproof Membranes: Briggs. Windows: Crittall Manufacturing Co., Ltd.



1/2 F.S. SECTION THROUGH FRONT WALL

Lavatories are placed in the unlit parts of the building and are completely internal and mechanically ventilated.

Construction

Although the building was originally designed as a brick load-bearing structure an anticipated shortage of bricks necessitated an R.C. frame with brick facings. The retaining walls are of reinforced concrete and floors are of pre-stressed "Stahlton" construction spanning from the external wall beam to the corridor beams. The corridor is of in-situ R.C. construction supported on R.C. columns each side of the corridor and forms a rigid central spine to the building. The Stahlton floor gives a ceiling without beams for the whole length of the building each side of the corridor.

Windows span between columns and for the spandril panels below a pre-cast R.C. slab was designed, cast in one piece 2in thick with 2in×3in wide ribs at the back at 3ft 6in ccs. The whole slab, measuring approximately 10ft 3in×4ft, was designed within a weight limit of one ton to be hoisted into position by the tower crane in one operation.

The slab is faced with Italian dove grey marble aggregate, which was polished and textured by brushing the face while green. The slabs are lined with insulating board and backed with concrete when in position to give a panel 4in in thickness as required by the constructional by-laws.

Services

These are run in vertical ducts formed adjacent to lavatory blocks and elsewhere with other ducts separate from soil, ventilating and heating runs for internal and external telephone systems, etc.

The electrical and telephone circuits are provided on a

grid pattern with outlets and draw-in boxes placed on the centre line of each column and 2ft from the external walls. The cabling to telephone instrument positions and for electric desk lighting and power points is run in a detachable aluminium skirting forming part of the partitions which are of the demountable "Gypunit" type.

Elevational Treatment

The basic treatment is a development of the structural elements. Windows and pre-cast panels previously described are set on the same plane 9in back from the front face of column with specially designed head and sill members in aluminium.

At fourth-floor level railings are provided between the columns and form small balconies outside the directors' offices. The recessing at this level also gives some degree of protection from intruding noise.

Finishes

The ground-floor entrance hall walls are lined with Capriva marble. The suspended ceiling to stair and lift hall is in acoustic tiles. The floors are linoleum throughout to general offices and corridors. In the lavatories, w.c. partitions and floor tiles are pre-cast terrazzo, the walls are plastered and finished with "Emalux." The stairs have pre-cast terrazzo treads and risers with "Emalux" finish to the walls. Ceilings of the general offices are plaster painted with emulsion paint.

The directors' suites on the fourth floor, the lift hall, some offices and the corridors are panelled in veneered Canarium. The remainder and the secretaries' rooms are plastered and either painted or papered.

Lavatory and bathroom have Vitrolite linings to walls, all ceilings are acoustic tiled and floors are carpeted throughout.



The Main Entrance

Extracts from the 2nd, 3rd and 4th Papers read at the R.I.B.A. Conference on Health Buildings held at the R.I.B.A. on October 21st - 22nd

The General Design Problems of the Hospital

By M. E. MOLANDER,

Director, Central Hospital Planning Bureau of Sweden

The Size of the Hospital

IN all countries with a modern hospital system every hospital is assigned a special task within the organization. The general differentiation is in principle the same in all those countries, and it may be sufficient to mention that hospitals range from highly developed, specialized regional centres with medical schools to mere cottage hospitals or periphery health-centres with some beds attached to them. The size of the hospital more or less depends on the task thus assigned to it. Views on the most efficient and economical size of a hospital must, however, play a certain rôle when planning the regions.

Many views have been expressed upon the optimum size of the hospital. Several doctors and administrations have mentioned a figure of 500 to 800 beds with a tendency towards the lower figure. It is, however, impossible to judge directly from the actual costs per day or per patient. A more differentiated hospital with fairly small, heavily specialized and staffed departments has got to be more expensive than a fairly simple hospital with just surgery,

medicine and radiology, because of the difference in the tasks assigned to them. In order to throw some light upon this problem an investigation has been carried out by the State Committee on Hospitals in my country, and it may be of some interest to give a short summary of this investigation.

The committee found that the costs per day or per patient did not give any clue to the problem. A comparison between the number of employees per bed showed a definite minimum for hospitals with 400 to 500 beds. The same objections could, however, be raised against this comparison as against the one regarding the costs, namely, that hospitals fulfil such different tasks that a direct comparison of this kind is misleading. It is only natural that larger and more specialized hospitals should need more staff than simpler and smaller ones. Therefore the committee concentrated its attention upon the services outside the medical departments, not to any great extent influenced by the medical work within the hospital. A survey, leaving

doctors, nurses, sisters and medico-technical staff of similar kind out of consideration, showed that the tendency towards a definite minimum between 400 and 500 beds remained. The result is demonstrated by the graph (Figure 1). The top line concerns the administration and service departments except laundries, and the lower line the same services except both laundries and kitchens.

The investigation, which covered 97 hospitals, seems strongly to support the views on the optimum size of the hospital referred to previously. It is somewhat astonishing, anyhow, that the minimum is to be found below 500 beds.

It is not possible to go into details, but it ought to be mentioned that the values on which the graph is based seem to be distributed in a satisfactory way from a statistical viewpoint.

In order to control the representativeness of the hospitals as regards their general effectiveness, the turnover of in-patients per bed and year was correspondingly looked into. The



THE ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI

Winning design by H. J. Brown, Dip. Arch., A.R.I.B.A., L. C. Moulin, A.R.I.B.A., in association with A. Heslop Antrum, Dip. Arch., A.R.I.B.A. View from north showing the out-patients' department in centre foreground; wards on the extreme right; pre-clinical block to rear and teaching block connecting O.P.D. and pre-clinical blocks.

result showed that the highest number of patients per bed and year was to be found at the very hospitals with the minimum staff per 100 beds.

The Ward Units

After long consideration and after a thorough study we are not ready to abolish the 30-bed ward as the general model. We have been able to prove that smaller wards are more expensive to run (see my Paper at the Building Research Congress 1951),¹ but there has been no material available to prove that bigger wards would be more advantageous in our country. I can briefly say that medical, administrative and architectural considerations brought us back to the 30-bed ward as being the most convenient one.

In order to attain the greatest possible flexibility and capacity as regards occupancy, the ward-units nowadays usually are designed to make possible admittance of both male and female patients. This is of a certain importance, especially in departments with a limited number of beds or with an odd number of ward-units. It is also a reason for having separate rooms and not open wards, although the latter no doubt facilitate the work to a certain degree.

Six-bed rooms have been considered the maximum, but there is for the moment a tendency towards accepting also 8-bed rooms.

The number of patient rooms of different sizes very much depends upon the demand for isolation rooms. The Investigation into the Functions and Design of Hospitals, sponsored by the Nuffield Provincial Hospitals Trust, has made an investigation about the need for isolation rooms which has given a rather definite answer to this question. We have carried out a similar investigation, based upon nearly the same principles, i.e. we have adapted them for our conditions and for our somewhat different way of approach. The investigation covered 29 hospitals and 60 per cent of their medical and surgical wards. In the Swedish study the judging of the needs was made by the sister in charge of the ward, according to certain rules laid down in advance. In the English study the needs were judged by medical men.

The English investigation gave a total of 29 per cent in medical wards and 19 per cent in surgical wards, and the results arrived at in different countries and with a somewhat different approach thus seem to correspond astonishingly well.

We have not been able to work out the results in more detail as to the variations in occupancy, etc., and the average figures applied directly, with-

out any such considerations, would give the distribution of the isolation rooms as follows: In a ward of 30 beds the number of beds for medical use: 8.6 isolation beds; 4 one-bedrooms, 2-3 two-bedrooms. For surgical use: 5.6 isolation beds; 2 one-bedrooms, 2 two-bedrooms.

In surgical departments not less than 8 per cent of the patients needing isolation room were post-operative cases, which has to be taken into consideration in case a special post-operative department is arranged.

Operating Departments

There is always some risk in generalizing on hospital needs and demands. There are, however, many conditions that are similar or identical at a big number of hospitals or departments of a certain type. A hospital also has to be designed, not for a certain individual but for conditions that suit different individuals who may happen to work there. Therefore, a knowledge of average conditions is necessary and useful as guidance, but it must be based on sufficiently extensive material.

Some doctors are very rapid operators, others are not. An investigation in my country covering eleven hospitals during three weeks (21 days) makes clear, however, that certain outlines can be derived from material of this range, in spite of dissimilarities of the kind just mentioned. The investigation concerned general surgery and was carried out at departments chosen with a view to comparable conditions in regard to patients, medical standards and so on.

The investigation showed that the effective operating time per operating room could not be longer than 4½ or 5 hours without considerable drawbacks for the work in the surgical department as such. The average time for each operation was 1½ hours and the rooms could be used for planned operating

programmes about 260 days per year. This means that each room could be used for about 1,000 operations a year. This capacity, however, cannot be brought about if the theatres are not supplied with a sufficient number of localities for the patient before and after the operation. The need for special localities for endoscopy, fractures, emergency cases, etc., also has got to be taken into consideration.

The work in surgical departments is characterized by the steadily increasing number of more laborious operations. Figures from 13 surgical departments show that operations concerning the gall bladder have increased from 44 per 100 surgical beds in 1938 to 172 in 1950. At the same time there is a marked tendency towards longer operations as, owing to modern achievements, swiftness does not play the same rôle as formerly.

Two operating rooms can be regarded as the minimum requirement for a surgical department, as one of them must always be ready to receive acute and emergency cases.

The number of operations corresponding to 100 beds can be estimated at about 2,000 a year, and 10 to 25 per cent of them will occur as acute cases and emergency cases outside the planned daily operating programme. The round figures mentioned do not include minor operations, blood transfusions and the like.

X-Ray Departments

For ordinary general hospitals in country areas, the number of X-ray examinations can be calculated to about 50 per bed and year. In these areas the proportion of out-patient examinations will be about 40 per cent of the whole number of examinations. For ordinary hospitals the combination of various examinations is about the same, and departments serving hospitals of this kind therefore can be planned along the same lines.

Three X-ray rooms for radiography or fluoroscopy and one X-ray room for urology are considered sufficient for 25,000 examinations a year. The X-ray rooms contain two and occasionally three apparatuses. It is important that the X-ray rooms have almost direct contact with the dark-room in order to save work.

Developing machines now have come on the market and seem promising, but they are still rather bulky.

Central Kitchens

The central hospital kitchens in my country are generally situated in a separate building together with the staff restaurants. We have tried in some hospitals to have the kitchen in the main building, even on the top floor. The results are not so good, as

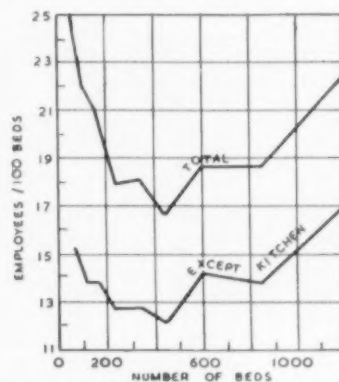


Fig. 1. Number of general services staff, except laundry, at hospitals of different sizes.

¹"Some Views on Hospital Planning and Research"

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the kitchen fairly often has to be rearranged and extended, according to the growth of the hospital.

The traffic to and from the wards is regular and can be organized in detail, according to a time schedule. Because of that we do not pay so much regard to a marked central position of the kitchen. The central spaces, furthermore, are considered more useful for services in close connection with the patient and the medical work.

A study showed that according to our conditions bigger central kitchens need less staff per day-portion than smaller ones. At a size of 100 day-portions a day (breakfast, lunch and dinner) every staff-unit can produce 18 day-portions a day, at 300 thirty, and at 800-900 nearly forty. The study also showed that it is unlikely that a kitchen exceeding the last-mentioned size will achieve any greater effectiveness. A figure of 800-900 day-portions

roughly corresponds to 650 beds.

The Co-ordination of Different Departments

In central general hospitals in my country nearly 60 per cent of all errands and transports carried out by the staff between different departments within the hospital have regard to operating theatres, X-ray and pathology. Of these errands and transports 60 per cent are composed of errands or transports between the ward-units and the departments just named.

These figures underline the importance of special attention being paid to the departments in question as regards their location. Even if the traffic between out-patient clinics and these departments cannot be compared with that from the ward-units, it has to be carefully planned (on an average three times as many out-patients as in-patients a year). In order to facilitate the work within the out-patient clinics and with a view to medical co-operation within the

hospital, a close connection between the out-patient clinics and the departments just mentioned is desirable.

One may say that the operating department, X-ray department and pathological laboratory form the centre around which other departments group themselves from the point of view of planning. The ward-units, on the other hand, and the patients within them represent the centre of gravity in hospital work.

The operating department almost entirely serves the in-patients, the pathological laboratory to 80 or 90 per cent and the X-ray department to about 60 per cent. Of all transport and errands carried out by the staff, two-thirds to three-quarters have regard to ward-units. Therefore the need for a very close connection particularly between medical and surgical ward-units and the said departments is obvious. The need for such a close connection is the more important as a great many patients in bed are transported to operating theatres and X-ray. According to our studies,

BEILINSON HOSPITAL ISRAEL

architects:

ARIEH SHARON
& B. IDELSON

THIS new general hospital has 500 beds and all medical and ancillary services (kitchen, storage, X-ray labs, operating theatre, etc.) for all the Beilinson Hospital area (with a total of about 1,000 beds). A typical floor contains two ward units of 35 beds each facing south, and a medical wing in the rear facing north with lifts and staircases in the centre of the building. On the ground floor there are additional one-storey buildings for administration, reception and emergency treatment. A clinic is in front of the main building and pathological institution at the rear.

The wards facing south are protected by 10ft wide terraces shown in one of the pictures, which also serve for rest and recreation of the patients. Service rooms and main medical services face north. The narrow west and east elevations of the building are protected by vertical movable louvres and the rounded entrance wing (reception and administration) is protected from the west sun by fixed concrete panels.



about 50 per cent of all errands between wards and operating departments are made up of patient transport. Between surgical wards and X-ray, 55-85 per cent of the errands were made up of patient transport, and between medical wards and X-ray 60-70 per cent.

I have tried to make an index for transport and errand frequencies regarding the ward-units in a central general hospital in order to get a sort

of graduation. The material at my disposal has not been so large, but has in principal matters been sufficiently in accordance. I have chosen as basis (100) the frequencies from a surgical ward-unit to the central kitchen, a fairly stable figure.

If medical and surgical ward-units are looked at together, which is convenient for practical reasons, the following approximate graduation is obtained: Pathology 110, central

kitchen 100, operating department 80, X-ray department 80, baths and patients' lockers 70, medical offices—out-patient clinics 70, administration 25, pharmacy 25, boiler-house, etc., 20, central store 15, laundry 10.

These figures are intended to throw some light upon the connections between the wards and different departments. Many other views are to be considered but the figures may serve as guidance.

The Hospital from the Nursing Point of View

By THEODORA TURNER, A.R.R.C., S.R.N., S.C.M.,

Diploma in Nursing, University of London

THE size of the ward is so controversial that I can only give a personal opinion, but some of the figures given by the Nuffield Provincial Hospitals Trust in the report on the Work of the Nurses in Hospital Wards are very illuminating. In the hospitals investigated, the overall staff/bed ratio stood at 1:2. In a small ward of 10-19 beds the staff/bed ratio was 1:1.3. In a large ward of 30-39 beds the ratio was 1:2.3. In these instances the staff included day and night nurses, domestic staff and orderlies. If the student nurses only were counted in a nurse/bed ratio this varied from 1:1.3 to 1:4.8. I will remind you here that this investigation revealed that 75 per cent of the basic nursing was done by the student nurse. I quote these figures to illustrate the staffing problems in different hospitals and localities. A popular hospital in a popular locality is naturally fairly easy to staff, and when planning a new building the recruitment facilities must be taken into consideration before the ward unit is designed. These figures also illustrate the fact that the large wards are not as well staffed as small wards. The patients therefore do not receive the same nursing care. Our aim is to give the patients the best possible attention with the personnel available. We must try therefore to find the most economically sized unit.

Another point to take into consideration when planning the size of the ward is the organization of the work. Mr. Llewelyn Davies mentioned the experiments in nursing sponsored by the Ministry of Health's Standing Nursing Advisory Committee; these experiments deal in particular with the assignment of patients to a trained nurse and a group of student nurses; they also take into account such considerations as different sized groups, number of patients, types of staff available, the teaching of student nurses and staff grouping. The result of these trials

will be of interest to the architect, as well as to the nurse.

Most hospitals in the United Kingdom still organize the nurse's work on job allocation; this method is more economical in the use of staff than case assignment or group assignment, but not as pleasant for the patient. The nurses themselves prefer the case or group assignment, for these methods are more interesting, encourage the feeling of responsibility and are also better methods of teaching the nurse her practical work. These methods, however, are more extravagant in the use of trained nurses—and where are they?

The Nuffield Trust, during the investigation already mentioned, found that none of the hospitals visited had completely adopted the case assignment methods for student nurses, but two of the small wards studied were practising it in a modified form. It is significant that these two wards had the highest staff/bed ratios of any of those observed—1:1 and 1:1.2.

I have perhaps given you more detail than you require but it is important for you to understand the nursing problem from the ward sister's angle. We would like to give the patients the best care, in the most comfortable surroundings, but owing to shortage of personnel a compromise must be found.

Personally, I think the ideal number of acutely ill patients one sister should have in her charge is 20, but this is not an economical number; therefore, under the present circumstances, it is more realistic to plan for a unit of 24 to 30 beds.

The four 20-bed units mentioned by Mr. Llewelyn Davies (Fig. 3) sound as if he intended the unit to be divided into two 40-bed wards, each under the care of one sister. I should not like to criticize this 80-bed unit until I had heard the details of the annexes. The plan sounds compact, but it might be too compact. I do agree that it would

be more economical to have seven floors of 40 beds rather than ten floors of 28 beds, but is the designer planning 40-bed wards or 20-bed wards? If the latter, he will waste a lot of space in duplicating his annexes; if the former, he will wear his ward sister out before her time.

The wards of the new Alexandria Hospital in Scotland are designed to form a 52-bed unit, divided into two wards of 26 beds (see plan). The unit is to have one sister in charge and one servicing unit centrally placed, but each unit of 26 beds is to have its own sluice and bathroom. The senior sister will have two staff nurses under her; she will be responsible for the general administration of the ward and a certain amount of the teaching and supervision of the student nurses, while the staff nurses will be mainly responsible for the actual nursing care. This arrangement sounds satisfactory and will be very economical of senior staff, but if all hospitals adopted this pattern it would mean that very few ward sisters could have senior posts, that is, be in charge of their own wards; the junior staff would get discontented, and continual changes would ensue. This particular design, however, should enable the organization of the nursing to be changed from job allocation to group assignment, as numbers of nursing staff allowed.

This design is one frequently met in America; a large ward unit is administered by a supervisor, equivalent to our sister-in-charge, and each small ward has a head nurse or ward sister. The supervisor has little real contact with the patients, and the head nurse has no real responsibility as far as the administration is concerned. I wonder whether this system would appeal to the British ward sister? It might work well in a geriatric or long-stay hospital.

There is also another new unit being built in Scotland in connection with the

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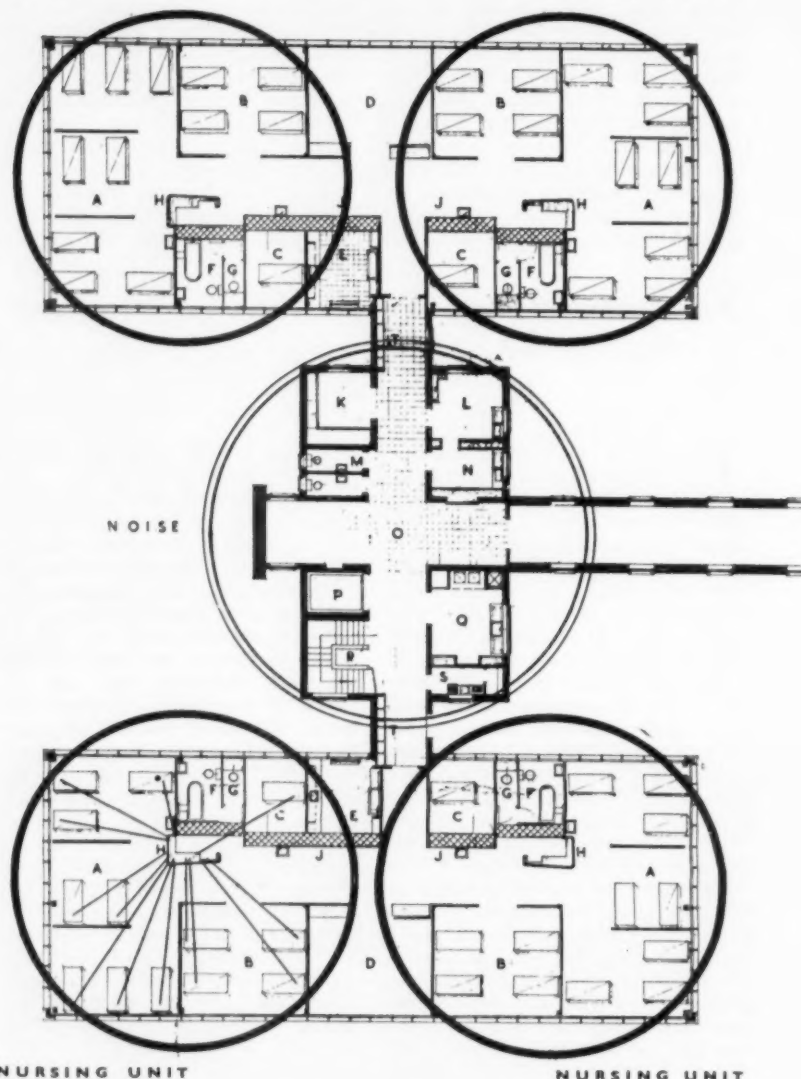
Nuffield Foundation Hospital Trust. This unit will have 64 beds on two floors; 32 beds on each. Each unit will then be divided again into 16-bed units, to be subdivided into three 4-bedded rooms and four single rooms—a central servicing unit for each floor. This design sounds as if it would facilitate the group assignment method of nursing, and also be easier for the ward sister to handle, as she would have a total of 32 patients.

The detailed design of a ward does not come within the scope of this Conference, but before leaving the subject I should like to mention the bed arrangement. This varies with the type of patient. It is usually found that the acutely ill prefer to be alone, or at least not lying in a line with 15 other patients; therefore the ward designs just discussed should be ideal for acute work. Some hospitals have put up Perspex partitions in their large wards and arranged the beds in fours, so that the beds are parallel with the walls. In acutely ill children's wards also it is easier to nurse the children in cubicles but in orthopaedic wards for either adults or children it is better to have the main wall unbroken by partitions, so that the patients can enjoy the various entertainments and parties, or, if children, the schoolmistress can do her teaching without moving the beds.

"Wards built a hundred years ago are still in use to-day, with minor alterations—though inconvenient they are still usable and patients are still being nursed in them. In this the ward may be contrasted with other parts of the hospital where buildings of similar age have often been found wholly inadequate for present-day purposes and have had to be drastically remodelled." I quote this from Mr. Llewelyn Davies. I know what he means but I do not agree when he goes on to remark that "the requirements of ward planning change with somewhat less rapidity than do those of many parts of the hospital." I think the change has been necessary, but the nursing staff have been slow to complain of inconvenience. I was brought up in a Nightingale-type ward and had to walk 192ft (96ft each way) every time someone at the end of the ward wanted a glass of water—and the nursing needs of a patient are unchanging! It has not been possible to alter old buildings but new designs are much more labour saving. It is important, with an ever-increasing shortage of nursing staff to locate the annexes and offices in a central position, but care should be taken to reduce noise. The annexe could have a lobby (very useful for

NURSING UNIT:

NURSING UNIT:



NURSING UNIT

NURSING UNIT

New hospital at Alexandria, Dumbartonshire. Ward unit and link unit.

- A. 8-bed Ward
- B. 4-bed Ward
- C. 1-bed Ward
- D. Visitors' Sitting-Waiting Room
- E. Sluice Room
- F. Bathroom

- G. W.C.
- H. Nurses' Station
- J. Cupboard Fitment and Duct
- K. Ward Linen
- L. Sister and Clinical
- M. Staff Lavatories

- N. Trolley Dressing
- O. Hospital Corridor
- P. Bed Lift
- Q. Ward Kitchen
- R. Staircase
- S. H.M.C.
- T. Cupboard Fitment

storing wheel chairs and trolleys), or some arrangement so that patients do not hear what is happening in the sluice room. It is almost impossible to move stainless steel and enamel ware without a sound. Have you ever lain in bed in hospital and heard the click-click of enamel in the early hours of the morning?

When planning a hospital it is usual to use the same design for the ward unit throughout the building; it is probably easier for the architect, but it

is also much easier for the nurse—familiarity makes for speed.

At present, early ambulation is the order of the day, but perhaps in a hundred years many patients may be kept in bed longer. The idea of providing wards which would be suitable for all types of patients is a good one, and if the internal walls were not load-bearing, rearrangement of the ward plan need not wait a hundred years.

Before leaving the subject of ward planning, I should like to mention cen-

tralization of certain services connected with the ward. Central supply rooms have developed out of a pressing need to economize in time, effort, materials and personnel. When designing a new hospital it is as well to consider this new trend because the extra space required is not small and the position of the store may be important in regard to the wards. For example, the centralization of linen. Many hospitals find this a most helpful arrangement—it saves the ward sister many hours of work and much responsibility. If a hospital intends to adopt this method, the ward linen room may become merely a cupboard, but the laundry and sewing room will need extra space for sorting and storing. American hospitals are very fond of various kinds of central supply rooms and in some hospitals all supplies required for the wards at any time, regardless of the frequency with which they are used, are included. I do not think in Britain we should consider this extreme of centralization but rather should we aim to maintain in the wards those articles in constant use and use central supply rooms for equipment required quickly but not necessarily frequently. One exception to this is a central supply of sterile syringes. This service does not affect the ward design, but could quite easily be irritating to an architect if suggested after his hospital was built. Two fair-sized rooms with special sterilizing and cleansing apparatus are required, and

these rooms might not be added easily to a completed building.

X-ray Departments

The department most frequently used by both in-patients and out-patients is the X-ray department, but the out-patient department should also be near to the dispensary and the pathological laboratory. Again, the X-ray apparatus should be adjacent to the casualty department, therefore it would probably save time and portage to have the former placed at ground-floor level; this arrangement would also save the in-patients a second lift journey.

The Theatre

The provision of recovery rooms within the theatre unit is a matter for debate. The main disadvantage is that the patient is nursed by strangers at a time when he is most distressed and nervous, also the nurse does not know the patient, and when a man is very sick it is easier to nurse him if you know what he is like when he is comparatively well—his likes and dislikes, his habits. On the other hand, it is very comforting to the nurse to know that the anaesthetist is on the spot and all the resuscitation equipment to hand.

I should, however, like all theatre units to have recovery rooms where a patient could be kept for the immediate post-operative after-care. This would solve the problem of having to move an unconscious patient from one end of

the hospital to another, and though it might not be possible for him to be looked after by one of his ward nurses I think the advantage, especially in this era of complicated anaesthesia, would outweigh any personal distress the patient might feel at the sight of a strange face.

With regard to the grouping of theatres, if the hospital is a large one the vertical arrangement, with a private lift and stairway between the units, would probably reduce the distance between the wards and theatres. On the other hand, the horizontal arrangement is much easier for nursing administration and more economical of staff. I understand that in America some hospitals are actually changing their theatre blocks from the vertical arrangement to the horizontal, as the latter are considered better in every way; for example, economy of rooms and better supervision by the theatre sister.

The internal arrangements of a theatre unit matter as much to the nursing staff as to the medical staff. Many surgeons do not realize this, so I make a special plea here that the theatre sister herself should be asked for advice when a new theatre block is to be built.

The out-patient department and the casualty department should have their own theatres in their own units and naturally these theatres would require well-equipped recovery rooms.

General Design Problems of the Hospital From the Medical Point of View

By J. O. F. DAVIES, M.D., B.S., M.R.C.S., Senior Admin. Med. Officer, Oxford Regional Hospital Board

ON the size of a hospital to be built, I do not believe that there are figures which could be said to be suitable for a given population. Hospitals in different parts of the country deal with their problems in different ways and at different paces. As an example of newer techniques I would quote the reduction of average length of stay of surgical patients in the Oxford Region. Since 1950 reductions of average duration of stay in some general surgical wards are as follows: 11.4 days to 8.4 days, 12.2 days to 9.2 days, 13.8 days to 11 days. In general medical wards reductions have been from 21 days to 15.8 days, and from 16 days to 11.2 days, and in gynaecological wards from 9.4 days to 7.3 days and 12.5 days to 8.3 days. These are examples of changes that have been brought about in a relatively short period of time. Similar reductions have been obtained

in other branches of acute medicine.

Children's Wards

The requirements of children's wards are somewhat different from those of the general wards. The nursing of very young children, who must be fed and changed at frequent intervals of the night and day is, if the child in addition is seriously ill, the whole-time work of one nurse, and this on a shift system with off-duty periods may mean three nurses. The late Sir James Spence for years solved this particular problem by admitting mothers to hospital to nurse their own children, and he regarded this arrangement as an indispensable part of nursing in a children's unit. The mother lives in the same room with the child, feeding it, tending it and keeping it in the most comfortable posture, with the sister and nurse at hand to help and administer

technical treatment. It is now generally agreed among paediatricians that in any children's unit there should be a sufficient number of cubicles large enough to take an adult bed with the cot for the infant. This is one of the particular and special problems of the children's unit.

A day room should probably be provided for mothers, with bathroom, lavatory accommodation and telephone arrangements special to the mothers, so that they can keep in touch with their husbands and homes.

Paediatric wards now tend to take medical and surgical cases without discrimination between them. Many paediatricians are placing too many babies in one place and they prefer the age groups to be mixed, as in the normal family. There is probably a good deal to be said for this, because toddlers looking at each other are in-

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tensely bored, whilst little girls of nine and ten and older are generally very pleased to look after smaller ones, and it may be that a combination of these age groups is a good arrangement.

The children's ward requires to be provided with two four-bedded admission wards (or perhaps four two-bedded ones) with beds widely spaced, to which new undiagnosed cases can be admitted. Once the children have been screened they are better moved to a larger main ward with more company. Over and above this there should probably be single rooms required for 5 to 10 per cent of the total number of patients. This total number in the opinion of many should not exceed 24 or 25 in one ward.

There is probably little future for the isolation hospital and there should be an isolation block as part of the children's department. Special provision in the children's unit is the milk kitchen. Feeds are now prepared for the most part on prescription in the milk kitchen, just as medicines are prepared in the dispensary. They are sterilized and taken to each ward sealed, so that the bottles are not opened until they have reached the babies.

In each children's unit there should be a treatment room in which dressings, lumbar punctures and painful manipulations are carried out and where anaesthesia will be needed frequently for the removal of painful dressings.

There is a good deal to be said for and against the children's hospital as opposed to the children's department of a general hospital. My own preference is for the latter. In any case it is probably desirable to place the children's department separately from the main hospital.

Maternity Units

Maternity units again have special requirements. The essentials are a number of small wards of not more than four to six beds, perhaps not more than two. There should also be some single beds for patients who require isolation for any reason. The incidence of sepsis in maternity units is now very low and most infections respond to treatment, but even so most obstetricians want to be able to isolate any of their patients readily. Among the special rooms required are those in which patients pass the first stages of labour. They should be near to the rooms in which delivery of the infants takes place. Maternity units are best provided with a theatre for the occasional operative interference necessary.

The department also requires a milk room in which milk feeds are prepared to supplement mothers' milk where needed.

The practice in most institutions in the past has been to provide nurseries for most of the babies to be housed at night. Indeed, many hospitals keep the babies wholly in the nurseries, taking them to their mothers only at feeding times. There is here a conflict of interests between the child specialist and the maternity specialist. The latter wishes the mother to make a good and quiet recovery, to have all the sleep she can and fit herself for the job of going home to cope adequately there with the new arrival. The paediatrician wants the mother and baby kept together, allowing the mother to pick the child up and feed it as needed, which amounts almost to when it cries and not at fixed hours. There is a movement away from the rigidity of three- or four-hourly feeding to what is termed "feeding on demand." Paediatricians hold that infection of the newborn child is less if given as much to the mother as possible and that there are many other advantages.

If this be accepted, then the smaller the wards the better, and the less need there will be for nurseries. My own feeling against nurseries of any size is strong. The infants are very young and tender plants and any misfortune may affect all in the nursery. Disasters do occur in the best conducted hospitals and I am firmly of the view that babies should be kept with their mothers. I have seen some of the plans of the new hospitals in Spain. Some of the maternity departments have only two- or three-bed wards as I have suggested. One surgical department I noted had two-bed wards almost exclusively and would have made a very good maternity unit.

With the maternity department should be the ante-natal clinic, and both can well be separate from the main hospital but near to the children's department.

My discussions with anaesthetists lead me to believe that in the future requests will be made for recovery beds immediately available, that is to say, within the curtilage of the theatre. The most dangerous time of anaesthesia is not in the operating theatre, where anaesthetists, surgeons and other staff are available, but in the first hour or two after the operation when the still unconscious patient, without a number of reflexes, is recovering. If there are two surgeons operating at the same time in twin theatres on both male and female patients, from this one pair of theatres patients are being spread to four wards, which are often at a considerable distance from the theatre. If

an emergency occurs during the recovery period it takes time to call specialist help to the patient's aid. If the recovery ward is within the precincts of the theatre help is available at once, and the anaesthetist or his assistants can regularly visit all the patients between operations until they are satisfied with the patients' condition. In some of the modern techniques, patients' blood pressure is reduced to low levels, from which it is brought back to normal in the succeeding twelve hours. During this stage, particularly in the early part of it, careful observation close to the theatre is what is needed. If all these patients are grouped together in a recovery ward in charge of a skilled sister or nurse, with expert help quickly available, the risk is greatly minimized.

In such a ward it would be desirable to have oxygen and suction piped to every bed. One ward might do for all these patients, with some division to separate the sexes. Nor need the bed spacing be anything greater than that which nurses would require to attend to the needs of the patients. The need for the recovery ward is not confined only to the patient who is gravely ill. Close observation is often needed after relatively minor operations.

I am aware that there are some acute nursing problems in connection with recovery wards and that a clear definition of responsibility is necessary. This, however, should not prevent the introduction of recovery wards. If the need for a recovery ward be accepted, then whether the theatres are grouped vertically close to the wards which they serve, or horizontally and distant from the wards, is a matter of much less significance. The main advantages of theatres stacked above one another were that patients had short distances to travel back to the wards and that pipe runs of various kinds could be kept straight. Each theatre, or each pair, was a completely separate entity from every other theatre or pair of theatres. One of the advantages of having theatres on one floor is that surgeons, anaesthetists and others are able to meet each other easily and regularly and senior clinicians and nursing sisters can supervise what is going on in a number of theatres with much greater ease than they can if theatres are stacked vertically. I think on the whole the advantage lies with the grouping of theatres on a horizontal plane and I should like to make them all identical in size and type, capable of being used for special purposes by means of special equipment. The theatres in the casualty department, to which I have already referred, can, I think, be less elaborate than those doing the main surgery of the hospital.

Productivity

THE British Productivity Council has issued a 48-page review of productivity in the building industry under the title "Building." (Copies price 2s 6d from B.P.C., 21, Tothill Street, London, S.W.1.) It is extremely hard to understand what the Council hopes to achieve by the issue of such an "airy fairy" review of so complex an industry. It gives very little guidance as to the steps which the industry might take to improve its productivity as, by and large, it merely comprises a series of references to publications which many of the industry have already seen in full. The impression gained from a careful examination of the document is that the time and effort put into the compilation and printing is rather wasted as it neither gives the world a proper picture of our industry nor any useful help to the industry as a means of solving its problems. One also has an impression that it is written by persons with no knowledge whatever of the industry but who have read many of the innumerable reports and publications relating to building which have been issued since the war.

Two Tables showing first the Distribution of Firms and Operatives and secondly Employment by Trades are given and are briefly discussed, but great care is taken not to draw any conclusions from them which might guide the industry. It is noticeable that the number of One-man firms, which nearly doubled in the immediate post-war period of 1945 to 1948, had fallen by about one quarter by 1953. There have also been small reductions in the firms employing 1 to 5, 6 to 9, and 20 to 99 in the same period, but there has been an increase in the number of firms employing over 500. Is or is not this an improvement? No answer is given. Many of us are likely to be a little "foxed" by Table 2 as the numbers of firms are not the same as in Table 1 nor are the descriptions of trades, "General Builders," "Building and Civil Engineering Contractors" and "Civil Engineering Contractors" quite as clearly definable in our minds as for example "Glaziers." A note explains that certain specialist trades are excluded, such as asphalt contractors, heating engineers, flooring contractors and even reinforced concrete specialists, so the picture of the industry is by no means complete. It is rather like a motor car without its paintwork.

The observations on the One-man firms and the small firms omit any reference to the fact that they do much work, often at a relatively low price as they have such small overheads; it is probable that much of the work they perform might not be done at all or alternatively would require prices which the public who employ them could ill afford. There is little doubt that there is not a great deal of opportunity to increase the productivity of the labour occupied in these very small

undertakings, but they are a very important part of the industry.

In paragraph 12 there appears a statement that "there has been a tendency since the war for builders to retain labour and to attempt to mould together teams." This is not something new since the war but merely an endeavour to return to pre-war practice when all established firms tried to keep an even continuity of work so as to keep teams of labour together; it was the increase in the use of very large firms away from their areas of work during wartime that broke up the normal teams of the smaller builders and encouraged the taking on and putting off of labour for an individual job greatly, in my opinion, to the detriment of the quality of building. It was the practice before the war to employ certain firms because enquiries indicated that they had teams of regularly employed skilled labour.

It is very noticeable that this review appears to ignore completely the subject of quality of materials and workmanship. Increased productivity from our industry will be quite useless to the nation if it lowers quality which in turn means increased maintenance costs. Far too much emphasis has been laid on quantity of output and not nearly enough on the elimination of upkeep. There is a constant heavy pressure for low initial costs, a movement which has been led by the Ministry of Housing, which disregards utterly the fact that all low first costs are liable to create an almost intolerable burden of repairs and replacement for future generations. A study of this problem would have made a more useful contribution to our industry than the publication of a review.

A number of Tables are given relating to the increased productivity on the building materials supply industries but with very few exceptions the prices quoted show very considerable increases since 1949. No Table is given showing any related cost of building a given house or other unit of construction which would indicate the effects of the increased costs of wages and materials and the extent of the offset of these rising prices due to increased productivity.

Many paragraphs are devoted to the subject of pre-planning and comprise a large number of statements and suggestions which it is probable that most of the industry know already and have been trying to put into practice for most of their working lives, but there seems to be very little new constructive advice. The industry spends much of its time on this subject and certainly much more than casual observers are likely to appreciate. The quoting of immense jobs such as the Fawley Refinery will cut very little ice with many of the industry who are concerned with organizing and carrying out jobs which are worth only a

few pounds. Vast schemes lend themselves to organization much more easily than do the average size building trade jobs as the very large contracts provide facilities for the employment of specialist planning management.

Paragraph 39 relates to what steps the Architects might take to educate their clients. No new suggestions are put forward which will help them to do what they have tried to do always.

Paragraph 41 quotes from the Paper by Mr. Broughton, of B.R.S., given at the R.I.B.A., suggesting that Architects "might well consider the advantages of taking a direct interest in the planning of all site work. They might, for instance, under the terms of the contract, call for a complete programme of all operations and stages of the work." There is little doubt that most Architects would like to have such a programme but only relatively few of the 105,002 firms quoted in Table 1 have a first clue as to how to prepare a proper programme and still fewer Architects are likely to have the knowledge to check whether or not the programme is workable.

The whole subject of site organization appears to be covered in two short paragraphs—43 and 44; the opening sentence of the former is "site organization can probably be divided into two stages—pre-planning and reviewing." All the second paragraph really says is that it is a good thing to hold site meetings. What a lot the authors have to learn!

One wonders whether it is necessary to quote from a Working Party Report that the essential preliminary to planning a contract is to have some drawings from which a Bill of Quantities may be prepared. In discussing Forms of Contract, references are to committee reports which have advocated a wider use of the R.I.B.A. Contract but this is immediately followed by reference to the need to bring in the contractor at the design stage which seems to indicate that it would be very difficult to use the R.I.B.A. Contract.

A collection of quotations from other sources such as form this review does not seem worth compiling or printing. If the Productivity Council wants to aid our industry let it get down to brass tacks and tell us just what to do to increase productivity and tell it to us in a language and form which small builders working long hours will find worthwhile to study and to put into practice. The whole industry is keen to know how to do its work using less labour and material. It may be that the B.P.C. is not aware that the B.R.S. has been trying for a long time to deal with this subject and has had some success, so that it might be more useful to give them the money.

DUTCH UNCLE

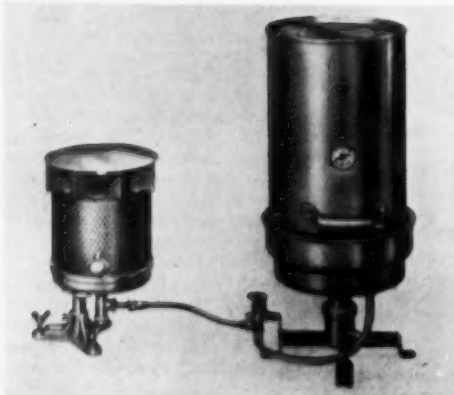
MOSAICS

SERVICES PLUMBING B4/26



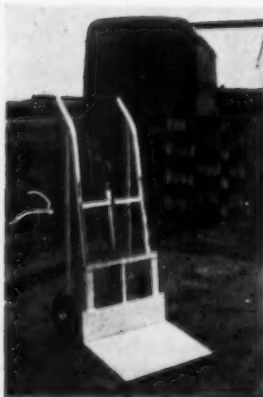
The Kingfisher syphon by Shires & Co. (London) Ltd., Guiseley, Yorks, is made of Shirene grade Polythene and can be fitted to all types and sizes of flat-bottom cisterns. The body which is moulded in one piece has a large cylinder and throat to allow full water way. The piston is of brass and a stop piece prevents the syphon moving out of position when the flushpipe is connected. It is claimed that operation is smooth and silent.

SERVICES WATER HEATING B6/27



The Valor Oil Conversion Unit made by The Valor Co. Ltd., Birmingham and distributed by Esso Petroleum Co. Ltd., of Artillery Row, London, S.W.1., is made in two sizes and is suitable for most domestic boilers. The 6in No. 870 is rated up to 25,000 B.Th. Units per hour and the 9in size No. 871 is rated up to 50,000 B.Th. Units having normal water storage tanks of 25-30 and 50-60 gallons capacity respectively. They burn paraffin or vaporizing oil which is fed to them direct from a 3-gallon container. Oil consumption is 0.5 to 2.25 pints per hour according to size and flame height required.

PLANT MISCELLANEOUS E14/10



The "Sherpa" Handraulic Truck is made by Salisbury Precision Engineering Ltd., Old Sarum Works, Castle Road, Salisbury, Wilts. It is of welded tubular construction and the platform mounted on four grooved rollers runs freely on the front tubes and is supported by a roller chain passing over a C.I. pulley attached to the end of the ram. The truck is carried on 10in heavy-tired wheels fitted with roller bearings. The pump is mounted integral with the ram and a safety valve releases the pressure on excessive load. The maximum load of 280 lb can be lifted 3 feet in 30 seconds.

FITTINGS SINKS, BATHS, ETC. C2/23



This "Compac" bath is made by M. Cockburn & Co. Ltd., Falkirk, branch of Allied Ironfounders Ltd. It can be obtained in white or coloured porcelain enamel on cast iron and has been designed by Carl Otto to give maximum bathing facilities in minimum overall space. It requires 10 per cent less hot water than the standard bath and is 1 1/2in lower.

Position of taps on side facilitates fixing by plumber. Dimensions—outside: 5ft long x 2ft 2in wide x 1ft 9 1/2in deep—inside: 4ft 8in long x 1ft 10 1/2in wide (max.) x 1ft 3 1/2in deep.

INDUSTRIAL NOTES

● The Ruberoid Company claims to have solved a problem on their own concrete floors which will interest all maintenance engineers concerned with the problem of potholes and cracking in the floors of factories and warehouses caused by the movement of heavy loads.

To-day the inconvenience and heavy cost of relaying the whole floor area can be avoided by the use of a floor mix which is easy to prepare, simple to apply and very durable.

The floor mix is made up as follows: 1 part cement, 2 parts clean sharp sand (passing a No. 10 sieve) and 1 1/2 parts Ruberoid Plastic Compound No. 100.

The chief characteristic of the specification is the manner in which the floor mix keys to shallow potholes—no cutting out of the concrete is required. The mix is simply trowelled on the cleaned and primed concrete. Cracked floors are treated in the same way.

Ruberoid Plastic Compound No. 100 is an emulsified bitumen compound, and its inclusion in the specification ensures durability and allows for a margin of flexibility.

● Mr. E. F. Haes, Managing Director of Sealocrete, Ltd., was in Baghdad at the time of the opening of the Fair; he will be in attendance on the Stand, No. 147 Engineering Group, until November 6, and after that hopes to visit other countries in the Middle East on his return journey.

● University and school buildings, costing about £2,500,000, are to be built in Rangoon, Burma, by a British firm. One project is an engineering college for Rangoon University, to hold 1,200 students on a 12 1/2-acre site. It will be the principal engineering college in the country, replacing a pre-war structure, and will be among the finest in South-East Asia. The scheme was illustrated and described in *A. & B. N.*, May 27, 1954.

Polytechnic and High Schools are to be built at another site about a mile away. This project includes an eight-storey block of flats for teachers.

The British firm, Taylor Woodrow, Ltd., of London, are doing the building and it is expected that they will be finished in 1956.

The architects are Raglan Squire and Partners, of London.

The contracts were among those for work totalling about £5,000,000 in all, signed between representatives of the Burmese Government and of the British architects and contractors concerned, at the Burmese Embassy, on August 23, following the recent arrival in London of a planning implementation mission.

A contract, worth approximately £2,000,000, was initialled on the same day between the Burmese Government and Holland & Hannen and Cubitts, Ltd., of London, for the civil engineering work, erection of buildings and the necessary mechanical and electrical installations for The Burma Pharmaceutical Industry. The contract includes provision for a railway line and jetty together with housing for the staff.

The factory buildings will cover well over a quarter of a million square feet of floor space.

● The Nottingham office of Williams & Williams, Ltd., is now County Chambers, 4, Bridlesmith Gate, Nottingham. This office is the headquarters of the North Eastern Divisional sales manager, Mr. H. Yard, and of the Nottingham Area manager, Mr. A. S. Reynolds.

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IN METAL WINDOW DESIGN
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HOPE'S

*pioneers since 1818 with the cup pivot lok'd bar joint,
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HOPE'S DOUBLE PANEL SCREENS

A flush-surface screen in which dust-catching ledges are practically non-existent. Ideal for hospitals, offices, laboratories and special process rooms.

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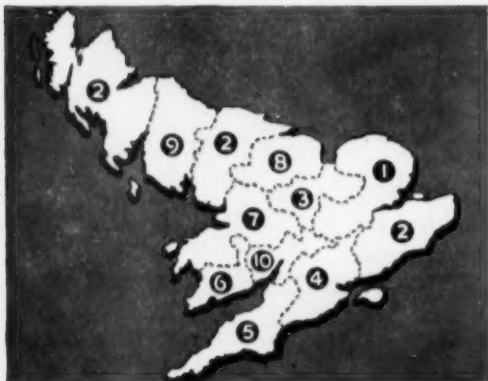
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*these buildings were erected in
a few days . . . from stock!*

The Unimer Organisation for the supply and service of Unimer tubular steel building components covers the whole nation through 10 Area Distributors. Because of the standardization of dimensions and components, each Distributor carries complete stocks, with buildings "on the shelf" ready for immediate delivery. So through the Unimer organisation, any size of building can be erected anywhere in a matter of days. Unimer components are adaptable to a variety of buildings for factories, offices, workshops, garages, agricultural buildings, etc. and are permanent structures which can be enlarged at any time by the addition of identical units.

*Unimer Components are
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418/422 Strand, London, W.C.2**

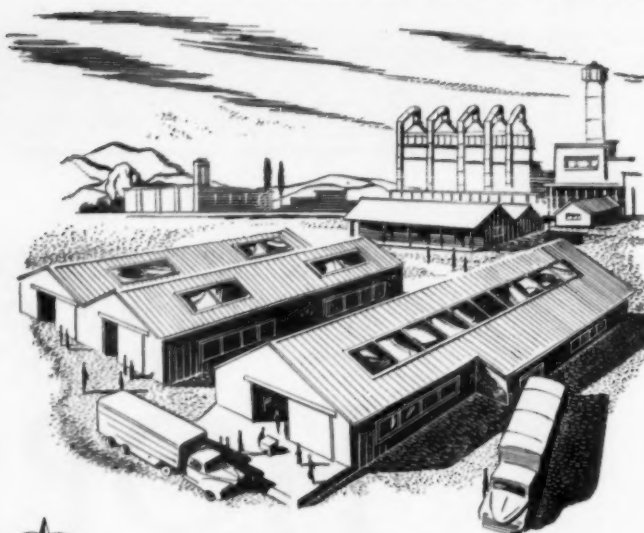
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COMPONENTS

The Unimer building consists of tubular steel trusses, purlins and sheeting rails, used in conjunction with tubular steel columns, in a wide range of spans and heights.



ACCESSORIES

The Unimer building can be clad with a variety of materials including Asbestos Sheets, etc. and can incorporate dwarf walls of brick or concrete blocks. Either roof or side lighting may be used.



ADVANTAGES

Tube is considerably stronger weight for weight, than sectional steel. Thus the Unimer building, whilst it is as strong, is lighter than a sectional steel building, so the saving in cost of steel, cartage, erection and foundations, make the Unimer building the fastest and most economical method of modern building.

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CURRENT MARKET PRICES (LONDON)

(These prices apply to material purchased in the quantities named or otherwise as might be expected for a new building of moderate size.)

October, 1954

AGGREGATES AND SAND

1½ inch—all in—ballast	22/-	Yard cube
¾ inch do. do.	23/-	delivered
¾ inch screened shingle	21/9	(in five yard
¾ inch do. do.	22/-	loads or
¾ inch granite chippings	60/-	more)
Sharp washed sand	22/-	
Pit sand	21/3	
Building sand	21/3	
Broken brick	18/6	
1½ inch shingle	21/-	
Cartage of muck	8/-	

BUILDING MATERIALS AS DESCRIBED, CENTRAL LONDON

CEMENTS packed in paper bags	Per ton
Portland in 6 ton lots	96/6
Do., from 1 ton to 5 ton 19 cwt do.	105/6
Do., Rapid hardening (6 ton lots)	104/6
Do. (but 1 ton to 5 ton 19 cwt)	113/6
Cement "Aquacrete" (do.)	138/-
Do., "417" or "Polar" (do.)	138/-
Do., "White" (1 ton lots)	257/-

LIME—	127/-	(1 ton loads) deliv'd.
Hydrated } including	124/6	(2/3 do.) do.
and } paper	114/6	(4/5 do.) do.
Ground } bags	112/6	(6 do.) do.

PLASTER—	
Keenes, coarse, pink (2 ton lots)	188/6 ton
Do. do. white (do.)	194/- do.
Sirapite, do. (2 ton to 3 ton 19 cwt lots)	139/6 do.
Do. finish (do.)	147/6 do.
Hardwall, do. (do.)	148/9 do.
Plaster, coarse, pink (do.)	137/3 do.
Do. do. white (do.)	145/9 do.
1½ in. Plaster baseboard (25 to 149 yards)	2/9 Yard Sup.
Do. (150 to 299 yds.)	2/5 do.
3½ in Jute scrim (100 yd. roll)	8/7 each
Cow hair (under 3 cwt)	97/6 cwt

FIRECLAY—	
Stourbridge, loose (1 ton lots)	166/3 ton delivered
Fire cement	12/3 14 lb

BRICKS

BACKING BRICKS (in truck loads)—	
Flettons	113/- per 1,000 delivered
Do. Keyed	115/- do.
Do. bullnose	133/- do.
Blue wirecuts	462/6 do.
White	192/- do.
Southwater engineering (No. 1)	370/- do.
Firebricks—2½ inch	69/3 per 100 delivered
Do. —3 inch	87/3 do.

STOCK BRICKS—	
Mild stocks	176/6 per 1,000 at Works
Second, do.	211/- do.
First do.	227/- do.
Add for delivery—approx. 45/- per 1,000 in lorry loads.	

FACINGS (ex truck or lorry)—	
Rustics	138/- per 1,000 delivered
White	200/- do.
Blue pressed, 2½ in	509/6 do.
Do. bullnose	527/6 do.
Reds (Multi sand faced)	290/- do.
White glazed stretchers	1280/- do.
Do. headers	1260/- do.
Do. bullnose	1600/- do.
Do. double stretchers	1700/- do.
Do. double headers	1500/- do.
Breeze fixing bricks	28/6 per 100
Fire tiles and lumps	33/- foot cube
Wall ties—8" × ½" × ½", black	60/- per cwt
Cement mortar (1:3) hand-made	82/- yard cube

BRICKLAYERS' SUNDRIES—

AIR BRICKS	9 × 3in	9 × 6in	9 × 9in	12 × 9in
Iron	each 1/10	3/-	4/5	6/-
Galvanized do.	do. 3/2	5/4	8/-	10/7
Terra Cotta	do. 1/3	2/6	6/-	10/2
Chimney pots, Terra Cotta (11 to 25)	do. 1ft 6/8	2ft 11/8	3ft 26/6	4ft 45/8

PARTITIONS—

18in × 9in Blocks keyed for plastering.	
Per yard super in 6 ton lots	2in 2½in 3in
In solid clinker including any half blocks	3/7 4/2 5/-
In cellular clinker blocks	4/3 4/11 5/9
In hollow clay blocks	4/3 4/6 5/-

Clinker blocks in small quantity 5/2 6/1 7/4
Intermediate quantities in all types may be had at intermediate prices.
Smooth in lieu of keyed faces extra cost per side 3d. per yd. super.

SINKS

Fireclay white glazed in and out—standard quality.	
24 × 18in 30 × 18in 30 × 20in	
London pattern, no overflow, 6in deep	62/- 77/- 81/-
Belfast, plain edge, 10in deep	71/- 122/- 163/-

FLUE LININGS PLAIN, CIRCULAR

	Foot lineal	Each
	Straight	Bends
9in diameter	3/8	11/-
10in do.	4/7	13/9
12in do.	8/8	26/-
9in diameter, beaded end, 12in high		4/10

FLUE PIPES AND FITTINGS

	4in	5in	6in
Heavy asbestos type, 6ft length	15/3	21/-	26/6
Do. 3ft length	7/8	10/6	13/3
Do. bends	5/9	7/3	8/8
Light asbestos type, 6ft length	12/6	15/9	21/-
Do. 3ft length	6/3	7/11	10/6
Bends	4/7	5/9	6/11
Baffler	12/5	14/9	15/8

DRAINAGE GOODS

GLAZED STONEWARE STANDARD LIST

	4in	6in	9in
ORDINARY TYPE—EACH			
Pipes in 2 feet lengths	1/8	2/6	4/6
Bends	2/6	3/9	10/1½
Junctions (4in on 4in, 6in on 6in, 9in on 9in)	4/2	6/3	13/6
Gullies with 4in outlets	6/3	6/10½	11/3
4in horizontal inlets	2/-	3/-	5/-
4in vertical ditto	3/-	4/-	7/-
Black iron grids	9d	1/5	2/9

Adjustment to Current Cost

	2 ton lots or more	Less than 2 ton lots
	100 pieces or more	Under 100 pieces
"Best" pipes and fittings. Percentages to add	67½	97½ 107½
Further percentages to be independently added in respect of: British Standard pipes, etc., 10. "Best" Tested pipes, 37½. British Standard Tested, 47½.		

IRON DRAINAGE GOODS—

	2 ton lots.	4in	6in
Each			
Cast iron pipes, 9 feet long		63/9	94/6
Do. 6 feet do.		46/2	72/6
Do. 4 feet do.		36/1	56/6
Do. 2 feet do.		22/1	33/11
Short bend		14/2	29/7
Junction		25/1	48/6

CURRENT MARKET PRICES (Continued)

DRAINAGE GOOD—Continued

GULLEY PARTS—		4in	6in
Traps, high level, invert	22/9	57/-	each
Inlet, bellmouth pattern	13/6	21/6	do.
Do. with one vertical branch ..	23/6	41/-	do.
Do. with two	50/-	90/-	do.
Extra for Sealed cover	7/-	10/6	do.

RAINWATER SHOES		4in	6in
With vertical inlet and rebated top ..	25/-	68/6	each
Extension piece, 6in high	15/6	15/6	do.
Flat loose coated grating	3/6	3/6	do.
Loose solid coated cover	4/8	4/4	do.

MANHOLE CHANNELS, WHITE GLAZED—		4in	6in	9in
Each				
Straight, 2 feet long	15/-	21/3	36/3	
Taper, ditto	25/-	25/-	37/6	
Bends, main, half section	28/9	41/3	67/6	
Ditto, branch, ditto	17/6	25/-	—	
Ditto, ditto, three quarters, ditto ..	25/-	38/9	—	
Junctions, single	23/9	41/3	—	
Ditto, double	32/6	56/3	—	

BROWN GLAZED CHANNELS—		4in	6in	9in
Based on standard list (less than 100 pieces)				
Half-round main channel (2ft long) ..	2/8	3/11	7/-	
Extra for stop ends	2/8	3/11	7/-	
Extra for outlets	5/3	7/10	—	
Channel bends with splayed ends ..	7/10	11/8	—	
Three-quarter section do. ..	10/5	15/7	—	

MANHOLE COVERS—		Black
24 x 18in Light foot traffic	33/6	each
Do. Strong do.	48/6	do.
Do. Light car traffic	102/-	do.
Do. Road traffic	155/-	do.

SUNDRIES—		Galvanized
Manhole steps		8/6 each
4in Mica valve fresh air inlets (L.C.C.) .. % ..	23/-	do.
Plumber's hemp	7/3	per lb.
Gaskin, caulking	1/5½	do.
Canvas backed hair felt, 4in wide	9d.	per ft run

ROOFING MATERIALS

WELSH SLATES (delivered)—		Quantity
		1,000 to 100 to 1 to
		1,999 499 99
Sizes in inches	per 1,000	per 100 per doz.
22 x 11	1976/6	240/- 31/6
20 x 10	1732/-	209/6 28/-
18 x 10	1254/-	151/6 20/-
16 x 8	807/6	97/6 13/-
14 x 9	711/6	86/- 11/3
14 x 4½	316/3	38/3 5/-

TILES (Brosley and Staffordshire)—		per 1,000	per 100
10½" x 6" Machine made	297/6	36/-	
Do., hand made, sand faced	354/6	43/-	
Hips, valleys and angles	31/-	per dozen	
Plain concrete tiles	177/-	Per 1,000	Per 100
			19/6

Sheeting asbestos corrugated, 6in pitch (23 to 85 super yard lots)	6/8½	yard super
4½in x 16 gauge, drive screws (galvanized)	16/3	gross
7½ x ½ hook bolts and nuts (do.)	52/6	do.
Washers, round, flat, galvanized	4/9	do.
Do. do. bituminous	2/-	do.

ROOFING FELT—		1/- Yard Super
Sanded bitumen felt (55lb)	1/6	Do.
Ditto, but 75lb in weight	3/-	Do.
Inodorous felt, best quality	2/4	Do.
Ditto, second quality	1/8	Do.
Underlining	1/8	Do.
Sheathing	1/8	Do.
Galvanized felting nails	1/6 lb	

PRECAST CONCRETE LINTOLS—

1 : 2 : 4—½in material, finished with fair exposed faces, including all form-work and one ½in diameter mild steel rod reinforcement to each 4½in in width.

Per foot lineal delivered to site.			
4½in x 6in	9in x 6in	9in x 9in	13½in x 9in
4/-	6/-	7/8	9/6
			18in x 9in 11/6

STONE

PER FOOT CUBE in random blocks not exceeding 20ft average in each.

BATH STONE F.O.R. SOUTH LAMBETH—			
Monks Park 7/10	St. Aldhelm 8/10	Douling 8/4	
STONE F.O.R. NINE ELMS—			
Portland brown Whitbed 8 1/4.		Beer 8/-.	
Over 20ft average cube blocks extra cost.			

TIMBER

Softwood—awn—random lengths.

	Per Standard	Per cubic foot
Carcassing quality	£100	12/1½
Joinery quality	£120 and up	13/4
Plain edged unsorted flooring, per square	½in 1in 1½in 1¾in	90/- 110/- 138/- 165/-

½in insulating wall board (600 yards) 4/8 yard super.

Larger quantities cost less, and smaller quantities more.

SUNDRIES—		Dia.	3in	6in	9in
Black hexagon bolts, nuts and washers. Each	½in ¾in 1in 1½in	7d. 10d. 12d. 1/2d.	9d. 1/1 1/6d.	11d. 1/4d. 1/10d.	
Sashline, hemp, good quality	No. 6	No. 8	No. 10		
Per Yard Run	9d.	1/-	1/3		
Floor brads				64/-	per cwt
Cut Clasp Nails				65/-	per cwt
Steel ordinary screws	1" No. 8	2 1/10	2" No. 8	4 1/10	per gross
Brass, ditto	Do.	7/1	Do.	14/3	

HARDWOOD—

	Per ft super	Per
Prime	½in 1in	ft cube
African mahogany	2/4	2/6 28/-
Honduras ditto	3/3	4/- 50/-
Portuguese Guinea ditto	3/1	3/3 36/-
African walnut	2/5	2/7 29/-
Australian ditto	5/6	5/10 65/-
English oak	4/3	4/6 50/-
Yugoslavian ditto	3/4	3/7 40/-
Burma and Siam Teak	5/-	5/9 65/-

DOORS.—STANDARD TYPE SOFTWOOD

Each in quantities 12 or more.

1½in finish, 4 horizontal panels moulded both sides, 6ft 6in high.

2' 3" wide 41/-

2' 6" do. 42/3

2' 9" do. 44/6

FLUSH DOORS 1½in thick, ply faced both sides, lipped edge.

All 6ft 6in high.

2' 3" wide 47/6

2' 6" do. 49/6

PANELLED DOORS:

see B.S. 459—Part 1.

FLUSH DOORS—

see B.S. 459—Part 2.

2in (nominal) as last but upper panel prepared for glazing

2' 6" wide 59/-

2' 9" do. 62/-

2in (ditto) all as above but in 3 panels.

2' 6" wide 55/9

2' 9" do. 58/3

2in (ditto) all as above but in 2 panels.

2' 6" wide 51/3

2' 9" do. 53/6

IRONMONGERY

	2in	3in	4in	5in	6in
Cast iron Butts, per pair	10d.	1/3	2/-	3/9	5/4
Hinges, spring, single action regulating, japanned, each	—	6/9	9/-	12/-	15/-
Do. but double action spring only, each	—	12/-	15/6	22/9	27/9
Do. blank only, each	—	5/6	10/6	12/9	16/6

PILKINGTON'S
"ARMOURPLATE"
Glass Doors

*make the most
inviting entrances*

They are contemporary. They are dignified.

They fit equally well into a fashionable shop front or a sober office lobby. Wherever you go you see "ARMOURPLATE"

Glass Doors demonstrating the fact that though a door is always a door,

it need never be a visual barrier. The fittings supplied with the door are made of

the highest quality materials. Handles can be varied to suit individual requirements.



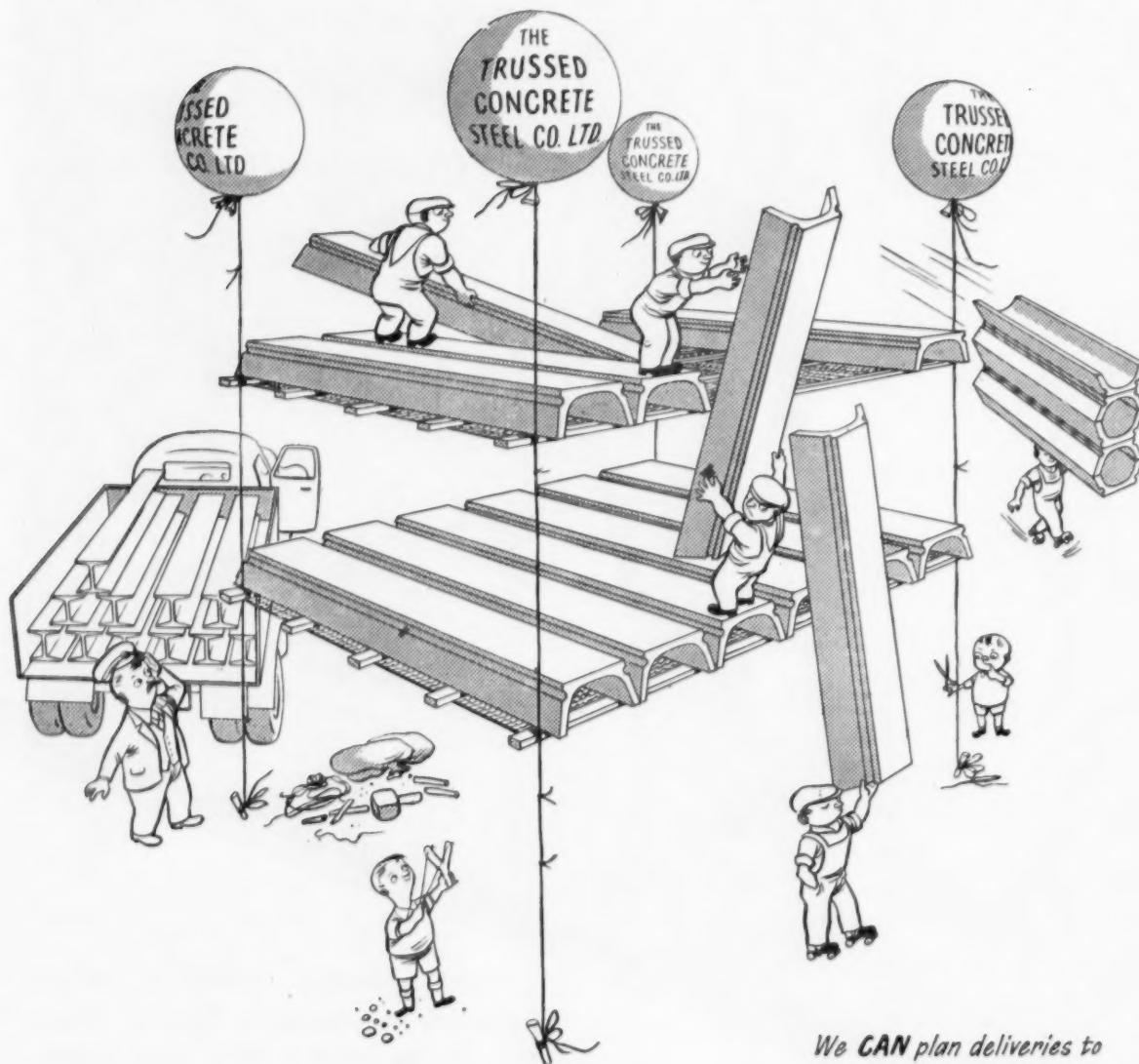
PILKINGTON BROTHERS LIMITED

FOR FURTHER INFORMATION ON THE USE OF GLASS IN BUILDING, CONSULT THE TECHNICAL SALES AND SERVICE DEPARTMENT, ST. HELENS, LANCs. (TELEPHONE: ST. HELENS 4001), ORSELWYN HOUSE, CLEVELAND ROW, ST. JAMES'S, LONDON, S.W.1. (TELEPHONE: WHITEHALL 5672-6). SUPPLIES ARE AVAILABLE THROUGH THE USUAL TRADE CHANNELS. "ARMOURPLATE" is a registered trade mark of Pilkington Brothers Limited

ADA12

THE TRUSCON PRECAST FLOOR

*is light in weight and can be placed rapidly
in position, providing a platform
for following trades.*



*We CAN plan deliveries to
suit a normal programme.*

TRUSCON *the proved precast floor*

THE TRUSSED CONCRETE STEEL CO. LTD.

TRUSCON HOUSE, LOWER MARSH, LONDON, S.E.1. Telephone: WATERLOO 6922

CURRENT MARKET PRICES (Continued)

IRONMONGERY—Continued

	12in	18in	24in	30in	36in
Tee hinges (japanned), per pair ..	2/-	3/10	—	—	—
Do. but stronger, per pair ..	3/4	6/1	8/3	—	—
Hook and Ride hinges, per pair ..	—	—	13/4	16/3	24/10
BOLTS—each—	3in	4in	6in	8in	10in
Cabinet, barrel, straight or necked ..	1/4	1/6	2/-	—	—
Square spring, with brass knob ..	1/3	1/6	2/-	—	—
Tower bolts ..	—	1/7	2/3	3/-	3/9
Barrel bolts ..	—	2/6	3/8	4/10	6/2
Add to Tower or Barrel bolts if necked ..	—	4½d	5½d	6½d	6½d
LOCKS—each					
Rim lock, 2 lever, wrot case brass bolt and bushing ..	11/9		Brass furniture ..	3/-	
			or Bakelite do.	3/1	
Mortice lock, 2 lever, bushed ..	15/8		Bakelite finger-plates	2/3	
			Brass furniture ..	7/-	
			or Bakelite do.	3/8	
Cylinder latches, japanned case ..				17/-	
Brass sash fastener ..				each 4/-	
Casement fasteners (malleable) ..				do. 1/6	
Do. stays (do.) ..				do. 2/-	
Axle pulleys (brass face, iron wheel) ..				do. 3/7	
Do. as last, but with brass wheel, 1½in ..				do. 4/8	
Sash line, No. 8 Anchor yellow label ..				per yard 1/-	

METAL GOODS

Bars—Rolled steel joists, all sections from 5" × 4½" to 16" × 6" inclusive (except 9" × 7", 10" × 8", 12" × 8" and 14" × 8") (over one ton) ..	£38/10/0	per ton
Extras—9" × 7" section ..	5/-	do.
4" × 4", 5" × 3", 10" × 8", 12" × 8", 14" × 8" and 16" × 8" to 20" × 7½" sections inclusive ..	10/-	do.
22" × 7" section ..	15/-	do.
4" × 2½", 4" × 3", and 24" × 7½" sections ..	20/-	do.
Steel angles and tees ..	£40/10/0	do.
Steel bars ..	£40/0/0	do.
Mild steel rods ½" diameter and upwards, cut to lengths within the usual margin and bent to normal schedules for reinforcement ..	52/-	per cwt
Extras per ton		
½in and ¾in diameter in size ..	27/-	per ton
¾in do. ..	27/-	do.
1in do. ..	34/6	do.
1½in do. ..	42/-	do.
2in do. ..	72/-	do.
2½in do. ..	102/-	do.
Extras for length		
5ft to 3ft ..	7/6	do.
3ft to 2ft ..	15/-	do.
2ft ..	22/6	do.
40ft to 45ft ..	15/-	do.
45ft to 50ft ..	22/6	do.
Bolts and nuts ..	85/-	per cwt
Trench covering, including trays 1½in deep and rebated frames, 9in wide ..	20/6	foot run
Do., but 12in wide ..	22/-	do.
Do., but 14in wide ..	24/-	do.
Do., but 18in wide ..	31/6	do.

METAL SUNDRIES

Cast iron pavement light filled with 4in × 3in glass lenses ..	40/-	per ft. super
½in wrought iron plate door in four panels with stiles and rails on both sides ..	45/-	do.
20 gauge galvanized iron trunking and straps ..	5/-	do.
24 gauge galvanized Tallboy 6ft high 9in diameter with 9in × 12in base ..	55/-	each.

CHAIN LINK FENCING—

In 25 yards lineal rolls inclusive of line wire.					
2in mesh.		Height in inches—			
	36	42	48	60	72
10½ wire gauge ..	89/6	104/6	119/6	149/-	179/-
12½ do. ..	63/-	73/6	84/-	105/-	126/-
14½ do. ..	45/-	52/6	60/-	75/-	90/-

DOUBLE SOOT DOORS AND FRAMES—

Fitted with brass turnbuckle 9in × 9in 12in × 9in 14in × 12in and cast key ..	17/3	25/-	42/9
---	------	------	------

SLIDING DOORS, GATES AND PARTITIONS—

Factory sliding doors in two leaves containing about 100 square feet with mild steel angle frames covered with 24 gauge corrugated galvanized sheeting and including hanging tubular track and gear complete ..	14/-	foot super
Factory entrance gates with mild steel frames clad with 2in mesh chain link complete ..	11/-	do.
Steel partitioning, glazed (rough cast) and stove enamelled ..	17/-	do.

STEEL ROOF LIGHTS—

Lanterns with vertical sides, and hipped roof, glazed with ½in cast glass and lead flashed.	16/6	foot super
Skylights of similar construction (180ft super)	15/6	do.

HIGH GRADE DOMESTIC BOILERS

Coke fed. Performance 20 to 40 gallons raised from 40°F to 140°F per hour as under.

TYPE		£	s	d
20 gallons per hour	Plain cast iron black finish ..	7	3	3
15in wide, 23in high.	Ditto, in cream mottle finish including side jackets ..	10	3	6
25 gallons per hour	In cast iron as before and base plate ..	10	13	6
19in wide, 22in high	Ditto in cream mottle with side jackets and base ..	15	13	9
40 gallons per hour	In cast iron, etc. as last ditto ..	16	18	6
22in wide, 23in high	Ditto in cream mottle all as last ditto ..	22	18	0

GAS, WATER AND STEAM TUBES

(From Standard List.)

Internal Diameter—	½in	¾in	1in	1½in	2in	2½in	3in	4in	6in	8in	10in	12in
Tubes .. per ft	4d	4½d	5½d	6½d	9½d	1/1	1/4½	1/10	1/10	1/10	1/10	1/10
Bends .. each	8d	9d	11d	1/2	1/7½	2/7½	3/2	5/2				
Elbows, sq. do.	10d	11d	1/1	1/3	1/6	2/2	2/7	4/3				
Do., round do.	11d	1/2	1/5	1/8	2/4	2/10	4/8					
Tees .. do.	1/-	1/1	1/3	1/7	1/10	2/6	3/1	5/1				
Crosses .. do.	2/2	2/4	2/9	3/3	4/1	5/6	6/7	10/6				
Backnuts .. do.	2d	2d	3d	3½d	5d	6d	8d	1/1				
Sockets .. do.	3d	3d	4d	5d	6d	8d	10½d	1/3				
Sockets, dimin. do.	4d	5d	6d	7d	9d	1/1	1/4	2/-				

PERCENTAGES ON OR OFF ABOVE

In quantity and in random lengths.

TUBE—			
Class A (light)	-22%	Black	-1½%
Class B (medium)	-11½%	Do.	+18%
Class C (heavy)	+½%	Do.	+35%
FITTINGS			
Lightweight	+11%	Black	+23½%
Heavy	+18½%	Black	+30½%

RAINWATER GOODS (Painted or Unpainted)

In consignments of 3 cwt. and over.

From Standard List.

Pipe:	2in	3in	4in	5in	6in
6ft. lengths ..	each 10/8	12/6	16/5	21/5	27/5
3ft do. ..	do. 5/10	6/9	8/8	11/4½	14/4½
Shoe, ordinary ..	do. 2/3	3/4	4/10	8/2	11/3
Bend ..	do. 2/8	3/9	5/5	9/9	12/8
Branch, single ..	do. 3/11	5/9	8/-	12/8	19/8
Offset, 4½in ..	do. 3/3	4/7	6/9	11/3	14/9
Do. 9in ..	do. 4/3	5/8	8/5	13/3	16/9
H.R. gutter, 6ft length ..	do. —	5/3	7/4	9/-	12/-
Angle or nozzle ..	do. —	2/2	2/8	3/3	4/8
Stop end ..	do. —	8d	11d	1/4	1/6

Rainwater goods plus 10% at foot of invoice.

CURRENT MARKET PRICES (Continued)

PLASTERING MATERIALS

Sand, lime, cement and various plasters are previously included under those heads—			
Metal lathing ($\frac{1}{8}$ " x 24G.) (20 yds.) ..	3/3	sq yard	
Plaster baseboard, $\frac{1}{8}$ " (600 yards) ..	2/2	do.	
Lath nails, galvanized ..	1/1	lb	
White glazed tiles ($6\frac{1}{2}$ " x $6\frac{1}{2}$ " x $\frac{1}{4}$ ") ..	17/9	sq yard	
Do. rounded on one edge } small ..	21/3	do.	
Do. on two adjoining edges } quantity ..	26/-	do.	

PLUMBER'S GOODS

4 lb lead sheet (in 1-ton lots) ..	147/-	per cwt
Lead water pipe in coils (do.) ..	148/5	do.
Plumber's solder ..	3/5	lb.
Copper tacks ..	6/9	do.

IRON SOIL AND WASTE PIPE. (Standard List)

each	2in	3in	3½in	4in
$\frac{1}{4}$ in Medium pipe, 6ft lengths ..	12/7	14/11	16/9	19/1
Ditto, 4ft length ..	9/0½	10/7½	11/10	13/4½
Bends ..	4/8	5/8	7/-	7/11
Ditto, with oval door ..	15/2	16/2	18/3	19/2
Junction, single ..	5/8	8/5	9/9	11/6
Ditto, with oval door ..	16/2	18/11	21/-	22/6
Swan necks, $\frac{1}{4}$ in ..	5/8	8/11	10/3	11/11
Ditto, 9in ..	7/6	10/3	11/11	14/-
Holderbat, 2½ in projection ..	4/8	4/10	5/1	5/2

All plus 10% added at foot of invoice

GALVANIZED CISTERNS, TANKS AND CYLINDERS—

each	gallons			
	Nominal capacity			
Bends over tops and corner plates. Riveted or welded	100	150	200	300
14 gauge ..	164/-	223/-	270/-	387/-
12 ditto ..	190/-	241/-	298/-	416/-
½ in plate ..	225/-	283/-	335/-	476/6

HOT WATER TANKS—

Riveted and with handhole and ring.	20	25	30	40
12 gauge ..	113/-	125/6	137/-	164/-
½ in plate ..	126/-	137/-	149/-	182/-

HOT WATER CYLINDERS—

Riveted, with handhole and ring.	20	25	33	39
12 gauge ..	144/-	161/-	175/-	187/-
½ in plate ..	161/-	179/-	195/-	208/-

PLUMBER'S BRASSWORK, etc.

	Each			
	½ in	¾ in	1 in	1½ in
Boiler screws, single nut ..	1/5	1/10	3/-	4/6
Ditto double nut ..	1/11	2/6	4/3	6/3
Cap and lining ..	1/-	1/6	2/-	2/3
Plumber's unions ..	2/3	3/-	4/-	6/10
Ball valves, screwed iron ..	12/6	19/6	—	—
Ditto, fly nut and union ..	13/-	22/-	—	—
Bib valves, crutch top screwed iron ..	8/6	12/3	—	—
Ditto, but screwed boss ..	10/6	13/8	—	—
Stop valves, screwed iron ..	7/6	10/6	—	—
Ditto, screwed iron and union ..	9/-	13/3	23/6	—
Ditto, double union ..	9/9	15/9	26/-	—
Waste, plug chain and stay ..	—	—	7/-	8/-
	1½ in	1½ in	2 in	4 in
Caps and screws ..	2/9	3/3	5/-	—
Sleeves, long ..	—	—	6/9	11/-
Ditto, short ..	—	3/2	4/3	6/9
Thimble ..	—	4/-	5/-	10/7
Full way gate valves, hot pressed ..	19/-	27/-	—	—
	1½ in	1½ in	2 in	
Lead 7 lb. P. trap ..	6/8	8/11	12/3	
Ditto, S. trap ..	8/2	10/11	15/1	
Lead 6 lb. P. traps with 3in seal ..	7/5	9/-	—	
Ditto, but S. traps ditto ..	9/2	11/2	—	
Wire ballon guards, copper, 2in 3/-; 4in 3/3.				
Ditto, galvanized iron, 2in 1/10; 4in 2/-.				
Hair felt, 34in x 20in, 24 oz., 6/- sheet.				
Boss white jointing compound, 2/- lb.				
Gaskin, 1/5½ lb. Hemp, 7/3 lb.				

COPPER TUBES—Extract from B.S. 659/1944—

Nominal bore	Internal work (semi-hard). Outside diameter inch	Gauge	Weight lb per ft	3 Cwts lots Price per lb pence	Price per ft pence
½ in	0.596	19	0.27	46½	12.67
¾ in	0.846	19	0.39	45½	17.70
1 in	1.112	18	0.62	43½	27.21
1½ in	1.362	18	0.76	43½	32.97
1 in	1.612	18	0.91	43½	39.44
2 in	2.128	17	1.40	44½	62.83

CAPILLARY TYPE CONNECTIONS—

Each	½ in	¾ in	1 in	1½ in	2 in
Straight ..	1/8	2/4	3/8	4/10	6/6
Bends ..	4/4	5/4	7/8	10/6	16/6
Tees ..	4/-	4/8	7/6	11/-	15/8
Brackets (Brass) ..	2/1	2/3	2/6	—	—

GLASS

	Per foot superficial	24 oz.	26 oz.	32 oz.
English, flat drawn sheet glass cut to sizes in squares ..	7½d.	9½d.	1/-	
Figured rolled and cathedral, white, cut to sizes, in squares (½ in) ..	9d	Per foot super		
Ditto, but in standard tints ..	1/4½	Do.		
½ in Rolled, cut to size, in squares ..	9d	Do.		
½ in or ¾ in rough cast ditto ..	1/-	Do.		
½ in Ditto wired ditto ..	1/2	Do.		
Georgian wired ditto ..	1/2½	Do.		
Fluted (No. 4) ditto ..	1/1½	Do.		
Reeded (narrow, broad, cross and major) ditto ..	1/1	Do.		
Reedylite (narrow and broad) ditto ..	1/1	Do.		
Spotlyte ditto ..	1/1	Do.		
½ in Calorexcast ditto ..	1/2½	Do.		

	5½" x 5½"	7½" x 7½"
3½ in hollow glass light diffusing blocks ..	2/9	4/2
Ditto corner blocks ..	5/3	6/9

POLISHED PLATE GLASS (Tariff). Cut to sizes.

Per superficial foot.	General Glazing	Qualities Selected Glazing	Silvering
In plates not exceeding:			
2ft super in each ..	3/7	4/3	5/1
5ft ditto ..	4/5	5/2	6/2
45ft ditto (unless extra sizes) ..	5/1	5/9	6/11
100ft ditto (ditto) ..	5/6	6/9	8/10
Extra sizes, i.e., Plates exceeding 100ft super or 96in high or 160in wide at higher prices.			

DECORATING MATERIAL

	Price	Unit
Aluminium Paint ..	37/6	Gallon
Distemper, ceiling ..	35/-	Cwt
Distemper, washable ..	120/-	do.
Enamel ..	60/-	Gallon
Gold Metallic Paint ..	86/6	do.
Heat Resisting Paint ..	50/-	do.
Japan, black ..	23/6	do.
Knotting ..	37/-	do.
Linseed Oil ..	11/6	do.
Boiled, ditto ..	12/-	do.
Proprietary Paints (good class)—		
Finishing ..	47/-	do.
Priming ..	50/-	do.
Undercoat ..	53/-	do.
Paperhanger's Paste ..	34/6	Cwt
Petrifying liquid ..	8/9	Gallon
Putty ..	47/-	Cwt
Size ..	9/3	Firkin
Terebinte ..	16/-	Gallon
Turpentine substitute ..	6/2	do.
Varnish, oak, copal, inside use ..	33/-	do.
Ditto, ditto, outside use ..	38/-	do.
Ditto, white, eggshell, flat ..	44/6	do.
White lead mixed paint ..	60/-	do.
White lead ..	170/-	Cwt
Whiting ..	12/6	Cwt

Marleyflex Floors were made for boys like Bill



Boys and dogs even the well brought up ones, have one weakness in common, they both think the proper place for the garden is inside the house. This can be a source of justifiable irritation to parents. Luckily, no matter how much mud and debris is spread around, a quick run over with a damp mop instantly restores a Marleyflex floor to its original freshness.

WRITE FOR OUR TWO BOOKLETS:

"Colourful Floors by Marley" (F.29)

AND "Why Solid Floors with Marley

Tiles are cheapest and the best" (F.F.2)

MARLEYFLEX

"Cock o' the Walk"



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London Showrooms at Alfred Goslett & Co. Ltd., 127-131 Charing Cross Road W.C.2 Telephone: Gerrard 7890

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for aerodrome hangars



The prime importance of the daylight factor in the design of aeroplane hangars is readily recognised, and the efficiency of approved patent glazing is, of course, the undoubted solution.

The enormous capacity area of a hangar, or the most modest workshop are equal in their requirements of maximum available daylight, and whether your premises are large or small, the quality, experience and service of HEYWOODS are at your disposal, together with the surety of ample resources, sound workmanship, and no production hold-ups.



BOAC Headquarters, London Airport

specify...



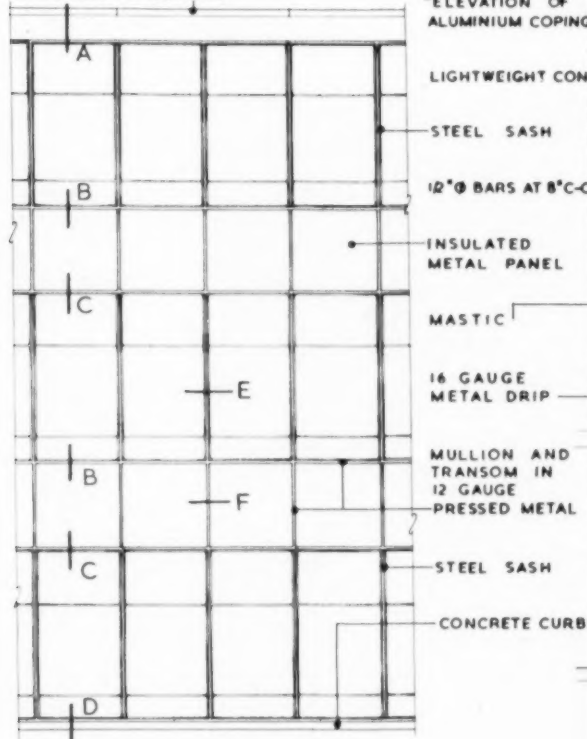
W. H. HEYWOOD & CO. LTD., HUDDERSFIELD. Telephone 6594 (5 lines)

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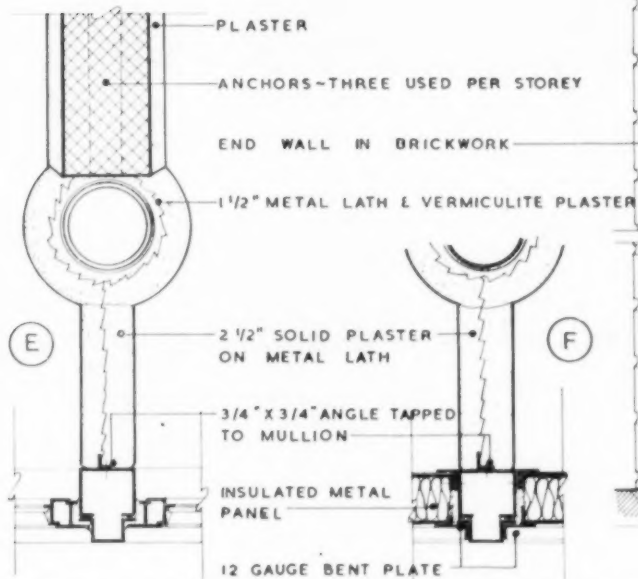
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5" LAP UNIT AT EACH JOINT

EACH 8' 0" UNIT BOLTED ONCE AT CENTRE OF LENGTH

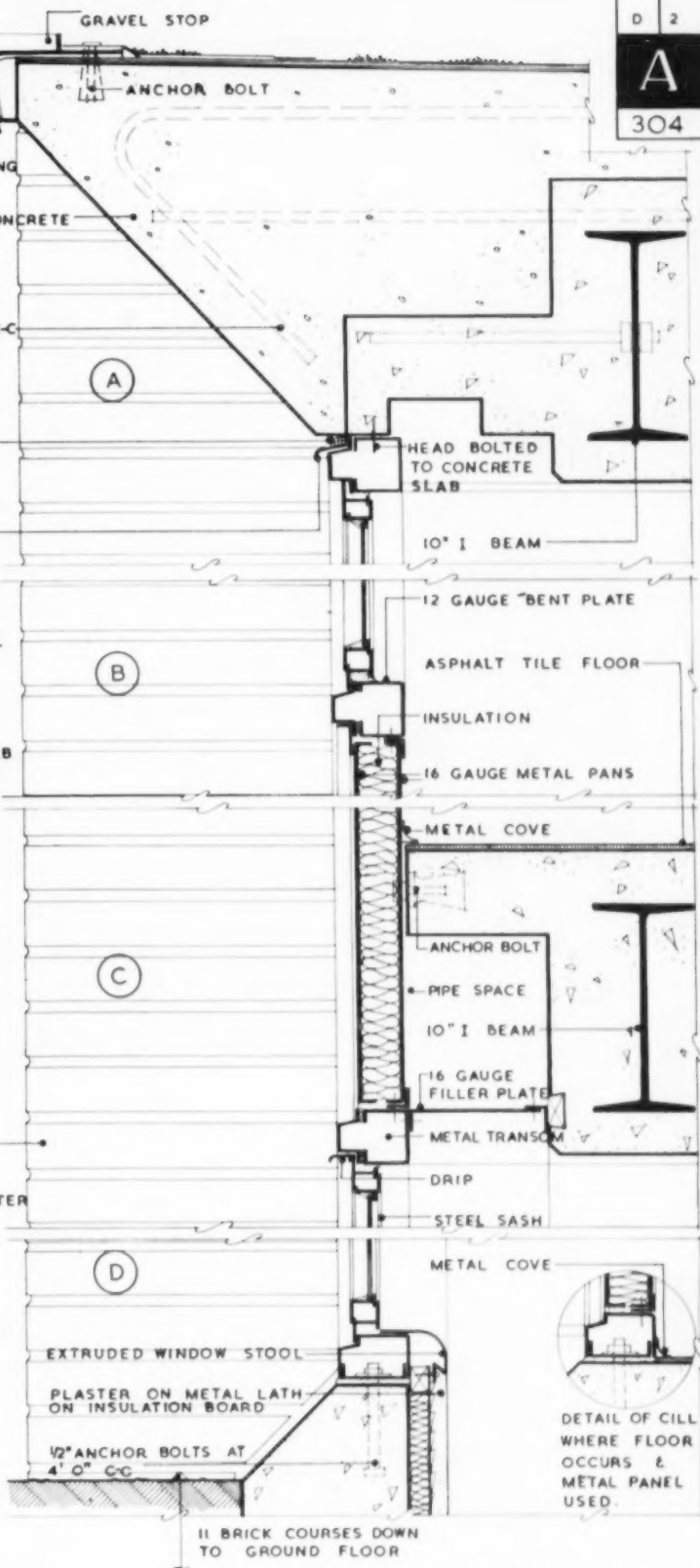


PART KEY ELEVATION OF THREE STOREY BLOCK.



TYPICAL SASH MULLION AT PARTITION

TYPICAL MULLION AT METAL PANEL LEVEL



TYPICAL WALL SECTION THROUGH METAL PANELS AND SASHES.

SCALE OF DETAILS • 1/2" TO ONE FOOT



WALL DETAIL, DRAKE UNIVERSITY, IOWA

ARCHITECTS: SAARINEN, SWANSON & BROOKS-BORG

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

CONTRACT • NEWS •

address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

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HARLTON (PATENTED)

TRADESMEN'S DELIVERY SAFE

- 4 self-locking compartments in revolving drum
- Frame of hatch mounted flush with external wall
- Burglar-proof Fly-proof Draught-proof
- External dimensions: 22" x 19"
- Weight 78lbs.
- Compact and attractive in appearance
- Negligible fitting costs

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ALL WOOD FIBRE
HARDBOARD
(Produced in Sweden)

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"QUITFIRE" impregnated in FIREPROOFED (Class 1 to B.S.476/32 Amdt No. 2) and FUNGUS-proofed or TERMITE-proofed (or all three combined).

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Plantation House, Mincing
Lane, LONDON, E.C.3
Tel: MANSION House 4406 (3 lines)

OPEN

BUILDING

ASHTON-UNDER-LYNE B.C. (a) Erection of a brick-built Institute for the employees of Passenger Transport Dept., Mossley Road. (b) Borough Engineer, Municipal Buildings. (c) 2gns. (e) Nov. 17.

BATH C.C. (a) Alterations and new club rooms at No. 12, Charlotte Street. (b) Surveyor of Corporate Property, The Guildhall. (c) 2gns. (e) Nov. 16.

BLANDFORD R.C. (a) 6 single-storey dwellings in 2 blocks, Pimperne. (b) E. A. Down, 47, Boscombe Overcliff Drive, Bournemouth. (c) 2gns. (e) Nov. 16.

BLETCHLEY U.C. (a) Construction of reinforced concrete structures and buildings at Sandhouse Waterworks. (b) Clerk of the Council, Council Offices. (c) £5. (e) Nov. 30.

BOURNEMOUTH B.C. (a) Erection of a steel-framed 3-storey building, floor area 12,000 sup. ft, single-storey building, floor area 6,000 sup. ft, etc., forming an extension of Municipal College of Technology and Commerce, Meyrick Road. (b) Borough Architect, Town Hall. (c) 5gns. (e) Dec. 4.

BOURNEMOUTH B.C. (a) Erection of temporary changing rooms at Strouden Park. (b) Borough Architect, Town Hall. (c) 2gns. (e) Nov. 13.

BRIGHOUSE B.C. (a) Erection of stores and lavatory accommodation at following housing estates: Cain Lane, Southowram; Field Lane, Rastrick; Smith House, Brighouse; and Stoney Lane, Lightcliffe. (b) Borough Engineer, Commercial Street. (c) £1. (e) Nov. 22.

BROMLEY B.C. (a) Erection of Pickhurst County Primary Junior School. (b) Borough Engineer, Municipal Offices. (c) 2gns. (d) Nov. 8.

CHESTER C.C. (a) 150 houses and flats, Blacon Housing Estate. (b) City Engineer, Municipal Offices. (d) Nov. 6.

CLEETHORPES B.C. (a) 44 dwellings in 22 pairs, Trinity Road Housing Scheme No. 8. (b) Borough Engineer, Council House. (c) 2gns. (e) Nov. 15.

COVENTRY C.C. (a) Erection of proposed Civic Centre. (b) City Architect, Bull Yard. (d) Nov. 20.

DEPWADE R.C. (a) Construction of a small housing site sewage works, Tivets-hall St. Margaret. (b) Engineer, Council Offices, Pulham Market, Diss, Norfolk. (c) £2. (e) Nov. 20.

EAST RIDING C.C. (a) Home for aged persons, Driffield. (b) County Architect, County Hall, Beverley. (c) £2. (e) Dec. 6.

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ESSEX C.C. (a) Erection of headmaster's house and minor adaptations to existing premises, Ramsden Hall Residential Special School. (b) County Architect, County Hall, Chelmsford. (d) Nov. 6.

FROME R.C. (a) 4 pairs of houses, with site works, etc., Faulkland, near Bath. (b) Humphrey H. Goldsmith, 18, Gay Street, Bath. (c) 2gns. (d) Nov. 9.

GOSPORT B.C. (a) Construction of a concrete base and ground work for proposed community centre for Bridgemary, Rowner and Woodcot. (b) Borough Engineer, Town Hall. (c) 1gn. (e) Nov. 25.

LINDSEY C.C. (a) Erection of Phase II of North Lindsey Technical College, Kingsway, Scunthorpe. (b) County Architect, County Offices, Lincoln. (c) £3. (e) Jan. 14.

LIVERPOOL C.C. (a) Additions to Belle Vale County Primary School. (b) City Architect, Blackburn Chambers, Dale Street, Kingsway, 2. (c) 2gns. (e) Nov. 13.

LONDON—WIMBLEDON B.C. (a) Erection of 6 elderly persons' dwellings in 3 pairs, Lancaster Road, S.W.19. (b) Borough Engineer, Town Hall, S.W.19. (c) 2gns. (d) Nov. 9.

LUTTERWORTH R.C. (a) 4 houses at Walcote. (b) Council's Surveyor, Council Offices, Wood Market. (c) 2gns. (e) Nov. 9.

MAESTEG U.C. (a) 12 houses at Fairfield Avenue. (b) Engineer and Surveyor, Council Offices. (c) 3gns. (e) Nov. 13.

MIDDLEWICH U.C. (a) (1) 20 houses, Queen's Drive, Chadwick Fields Estate; (2) 8 old folks' bungalows, Alexandra Road. (b) Council's Surveyor, Victoria Building. (c) 3gns for each contract. (e) Nov. 15.

MONTGOMERYSHIRE C.C. (a) 2 classrooms and cloakrooms with ancillary drainage and site works, as first instalment of new Primary School, Guilsfield. (b) County Architect, County Education Offices, Newtown. (c) 2gns. (e) Nov. 15.

NEW FOREST R.C. (a) 30 houses at Salisbury Road, Totton. (b) Engineer and Surveyor, Council Offices, Lyndhurst, Hants. (c) 2gns. (e) Nov. 15.

NORFOLK C.C. (a) Erection of a fire station, off Benn's Lane, Terrington St. Clement. (b) County Architect, 27, Thorpe Road, Norwich. (e) Nov. 29.

N. IRELAND—ANTRIM C.C. (a) Alterations and additions to Dunseverick Primary School, Bushmills. (b) Director of Education, Education Office, 475-477, Antrim Road, Belfast. (e) Nov. 15.

N. IRELAND—BANBRIDGE U.C. (a) Erection of caretakers' residence at Banbridge new service reservoir and Drumnahare Reservoir. (b) Messrs. R. Ferguson and S. McIlveen, 6, University Square, Belfast. (c) £5. (e) Nov. 15.

N. IRELAND—CASTLEREAGH R.C. (a) 5 pairs of houses, with ancillary works, etc., Moatview Park, Dundonald. (b) Clerk of the Council, Council Offices, 51, Lisburn Road, Belfast. (c) £5. (e) Nov. 12.

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NORTHAMPTONSHIRE C.C. (a) (1) Erection, excluding steelwork, (2) heating installation, or (3) electrical installation, at any of following: Corby New Modern School; Daventry New Modern School; Wellingborough Secondary Technical School; new teaching block, including alterations to existing buildings. (b) County Architect, County Hall, Northampton. (d) Nov. 9.

NORTH KESTIVEN R.C. (a) Block of 3 houses, Staples Lane, Waddington. (b) Council's Surveyor, 31, Clasketgate, Lincoln. (c) 2gns. (e) Nov. 18.

OXFORDSHIRE C.C. (a) Erection of following police houses: one superintendent's house, Henley-on-Thames; 3 pairs of police houses, Henley-on-Thames; one superintendent's house, Oxford; 3 pairs of police houses, Witney. (b) County Architect, Park End Street Offices, Oxford.

PLOUGHLEY R.C. (a) 2 blocks of 4 houses and one pair of houses, Stratton Audley, near Bicester, Oxon. (b) F. E. Openshaw, 65, St. Giles' Street, Oxford. (c) £2. (e) Nov. 19.

PONTARDAWE R.C. (a) 20 houses, Cwmdu Housing Site, Cilmaengwyn. (b) Engineer and Surveyor, Council Offices. (c) 2gns. (e) Nov. 18.

PORTSMOUTH C.C. (a) (1) 2 bungalows, Cottage View and (2) 104 houses, Bedhampton Camp (North). (b) City Architect, 1, Western Parade. (c) £1 each contract. (d) Nov. 10.

SAFFRON WALDEN R.C. (a) (1) Erection of 12 houses, Wimbish; (2) construction of a sewage works and laying of sewers, Wimbish. (b) Clerk of the Council, Council Offices, Debden Road. (e) Nov. 13.

SCOTLAND—ARGYLL C.C. (a) 6 houses and rural school, and provision of water supply, Arinagour, Isle of Coll. (b) County Architect, County Offices, Dunoon; immediately.

SCOTLAND—GLASGOW C.C. (a) 2 double and 4 single shops and 8 maisonnettes, Summerhill Road, Drumchapel, Unit 4. (b) Architectural and Planning Dept., 20, Trongate, C.I. (e) Nov. 25.

SCOTLAND—MILNGAVIE B.C. (a) 20 houses, Mugdock Road (all trades). (b) Burgh Surveyor, 3, Buchanan Street. (d) Nov. 8.

SHREWSBURY B.C. (a) Erection of old persons' bungalows as follows: Springfield Estate (Part VIII)—5 bungalows; Meole Brace Estate (Part IV)—8 bungalows; Meadows Estate (Part X)—2 bungalows. (b) Borough Surveyor, Guildhall. (e) Nov. 19.

SMETHWICK B.C. (a) Erection of police sub-station and 5 police houses, Oxford Road. (b) Borough Engineer, Council House. (c) 2gns. (d) Nov. 5. (e) Dec. 6.

SOUTHEND B.C. (a) 49 houses and flats, Site No. 27; and 3 houses, Eastwood Park. (b) Borough Architect, Town Hall. (c) £2. (e) Nov. 15.

STOCKPORT B.C. (a) Erection of new assembly hall, Longfield Open-Air School, Mauldeth Road, Heaton Mersey. (b) Director of Education, Town Hall. (c) 1gn. (e) Nov. 27.

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SWANSEA B.C. (a) Erection of Mynyddbach County Secondary School for Girls. (b) Borough Architect, Guildhall. (c) £5. (d) Nov. 20.

MISCELLANEOUS

WEMBLEY B.C. The Borough Council invite applications from Building Contractors for inclusion in selected lists of Contractors from whom tenders will be invited for erection of houses, flats and ancillary works. Lists will be for contracts of the following values: List A—over £100,000. List B—between £30,000 and £100,000. List C—between £2,500 and £30,000. List D—between £500 and £2,500. Applications to Borough Engineer, Town Hall, Wembley, by November 15.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, of modification of tenders, etc.

LAMBETH B.C. (1) Erection of baths and laundry. (2) China Walk, Lambeth. (3) F. Troy and Co., Ltd., 129, Great Suffolk Street, London, S.E.1. (4) £118,623.

LIVERPOOL REGIONAL HOSPITAL BOARD. (1) Extensions. (2) Victoria General Hospital, Liverpool. (3) Wm. Moss and Sons, Ltd., Roscoe Street, Liverpool. (4) £75,179.

LIVERPOOL CORPORATION. (1) Construction of river wall. (2) Otterspool. (3) Geo. Dew, Ltd., Main Road, Oldham. (4) £755,000.

READING B.C. (1) 108 flats. (2) St. Michael's Estate. (3) Wates, Ltd., 1258 London Road, Norbury, S.W.16. (4) £150,859.

DONCASTER. (1) Cinema, for Circuits Management Association. (2) Hallgate. (3) Sir Robert McAlpine and Sons, Ltd., 80, Park Lane, London, W.1. (4) £200,000.

KING'S LYNN B.C. (1) 98 dwellings. (3) Jaques and Greeves, Ltd., Kingsway, King's Lynn, Norfolk. (4) £110,495.

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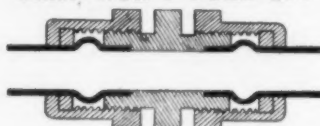
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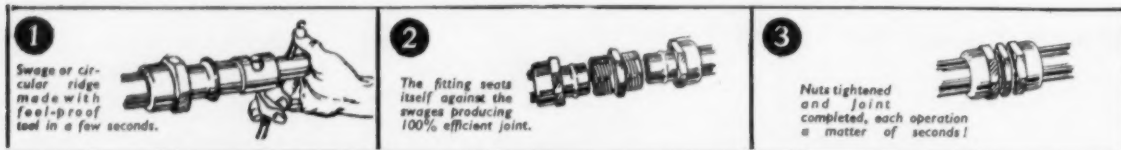
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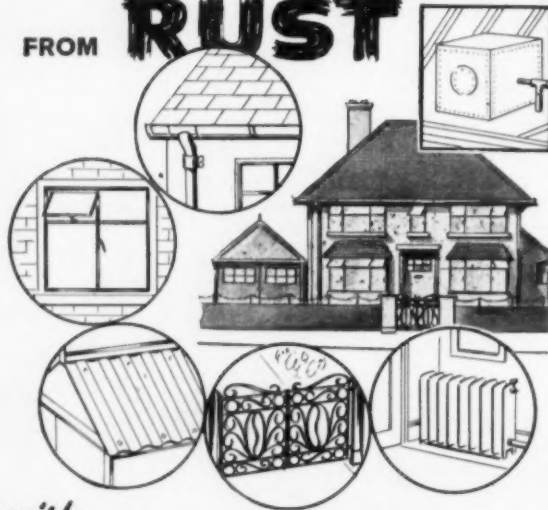
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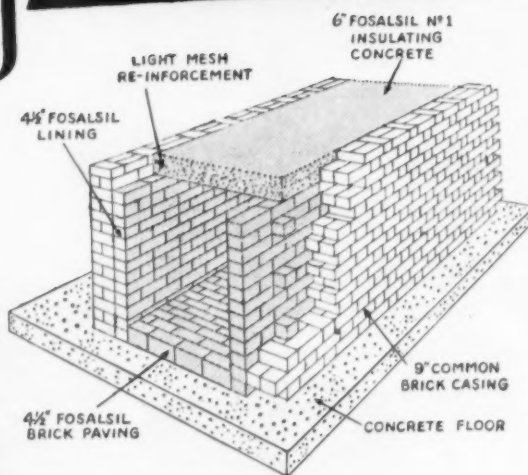
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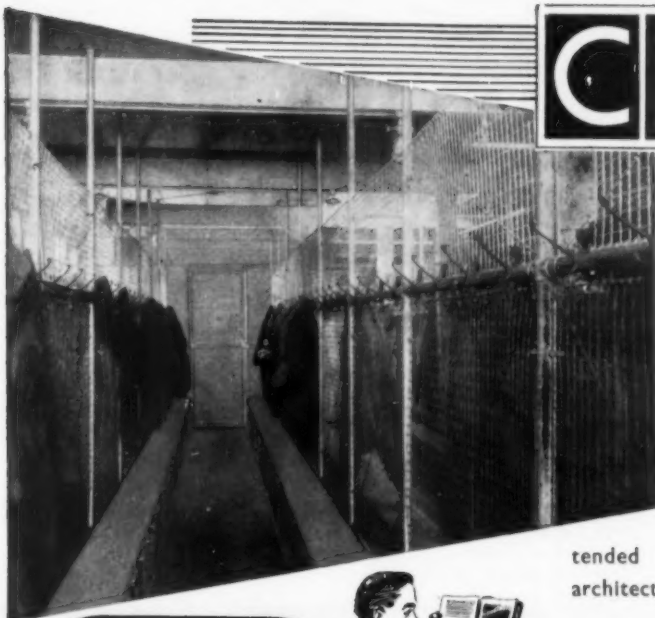
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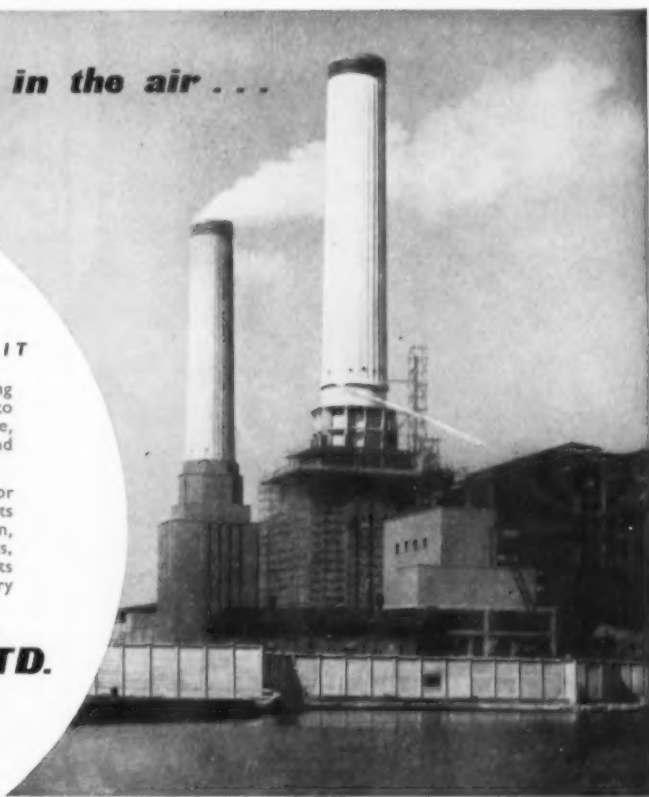
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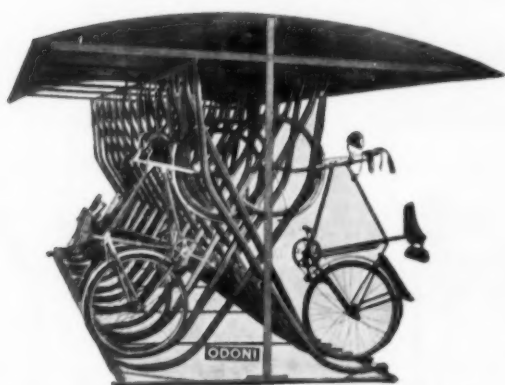
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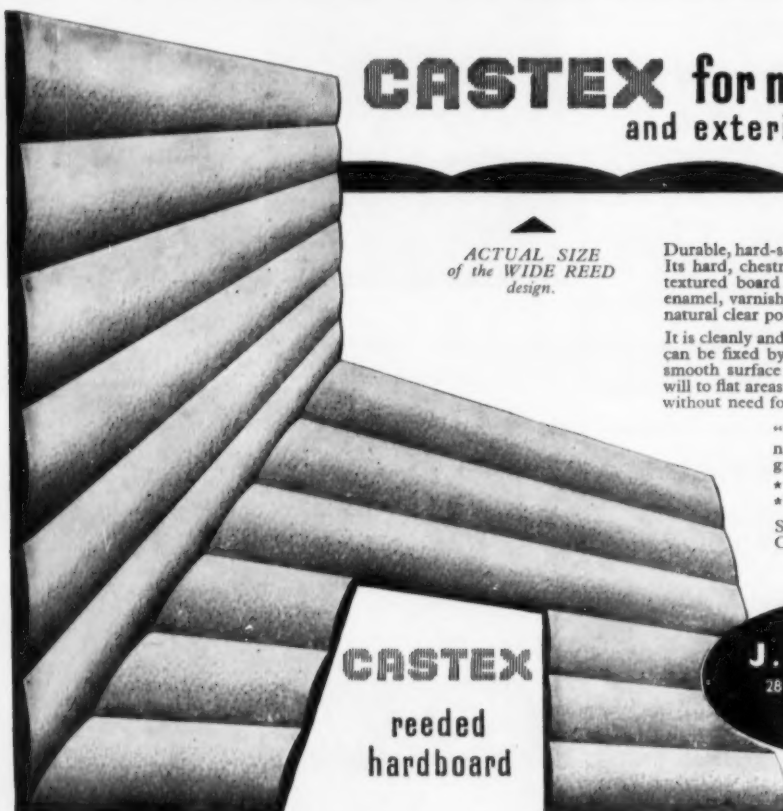
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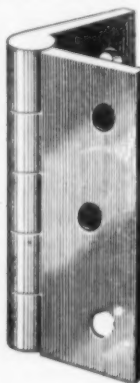
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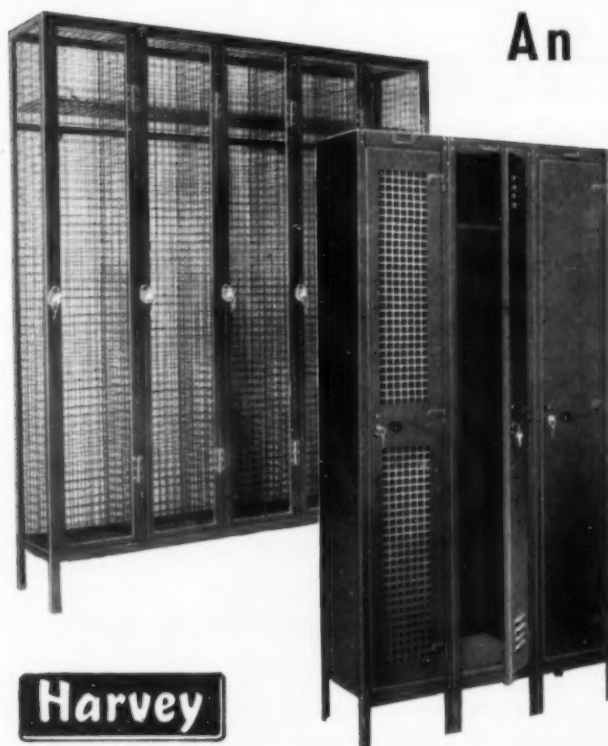
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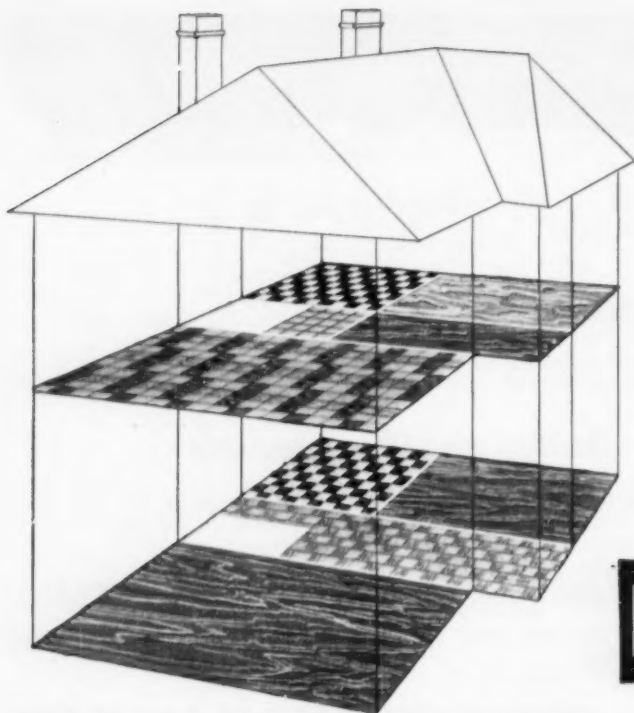
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APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc. If the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

COUNTY BOROUGH OF WEST HAM.

BOROUGH ARCHITECT & PLANNING OFFICER'S DEPARTMENT.

APPLICATIONS are invited from men of enthusiasm and first-class ability for the following established posts:

(a) PRINCIPAL ASSISTANT ARCHITECT/PLANNER, £1,100-£1,250 p.a.

Must be Chartered Architect and should be A.M.T.P.I. or equivalent. Will be responsible for the co-ordination of the Housing Programme, the preparation of detailed layouts of residential areas at high densities and the supervision of large building contracts. Commencing salary within scale according to experience and qualifications.

(b) CHIEF ASSISTANT, PLANNING.

Must be A.M.T.P.I. and additional qualification A.R.I.B.A. or A.R.I.C.S. an advantage. Will be responsible for Planning Administration generally. Experience in the replanning of blitzed or obsolete urban areas required.

(c) CHIEF ASSISTANT ARCHITECT.

Must be A.R.I.B.A. Will be responsible for the Education programme, Public Buildings, and some Housing schemes. Experience in the supervision of large contracts necessary.

The salary for posts (b) and (c) will be APT Grade X—£920-£1,050 plus London Weighting. May be revised with effect from 1.1.55 to amended Grade VII—£900-£1,100 plus London Weighting.

Application forms, returnable by 16th November, 1954, from Thomas B. North, O.B.E., F.R.I.B.A., Dist. T.P., Borough Architect and Planning Officer, 70, West Ham Lane, Stratford, E.15. [8463]

LONDON COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

VACANCIES for ARCHITECTS, Grade III (up to £892 10s), and ARCHITECTURAL ASSISTANTS (up to £739 10s) in Schools and Housing Divisions.

Particulars and application forms from Architect (AR/EK/A/3), County Hall, S.E.1. (1058.) [0146]

COUNTY BOROUGH OF BURY.

AMENDED ADVERTISEMENT.

APPLICATIONS are invited from suitable qualified persons for the position of SENIOR QUANTITY SURVEYOR in the Borough Engineer's Department. Salary up to Grade A.P.T. VI (£695-£760).

The appointment is superannuable and subject to medical examination.

Applications stating age, details of training, qualifications and experience, together with the names and addresses of two persons to whom reference may be made, must reach me not later than November 9th, 1954.

EDWARD S. SMITH,
Town Clerk.

Town Hall,
Bury.

October 29th, 1954. [8476]

BOROUGH OF HORNSEY.

TEMPORARY ARCHITECTURAL ASSISTANT required for the Architects' Section of the Borough Engineer and Surveyor's Department, A.P.T. VII (£765-£840, including London Weighting). Commencing salary according to experience.

Application Form from Borough Engineer and Surveyor, Town Hall, Crouch End, London, N.8, to be returned by November 18th, 1954.

H. BEDALE,
Town Clerk.

CLEVEDON URBAN DISTRICT COUNCIL.

VACANCY for TEMPORARY ARCHITECTURAL ASSISTANT, A.P.T. IV (£580-£625), N.J.C. conditions. Housing favourably considered. Applications naming two referees to undersigned by 13th November, 1954.

H. B. HANSON,
Clerk of the Council.

The Council House,
Clevedon.

[8477]

APPOINTMENTS—contd.

BOROUGH OF OLDBURY.

BOROUGH SURVEYOR'S DEPT., ARCHITECTS' SECTION.

APPLICATIONS are invited for the following appointments in the Architects' Section of the Borough Surveyor's Department.

(a) 1 CHIEF QUANTITY SURVEYOR—Grade VIII.

(b) 1 ASSISTANT ARCHITECT—Grade VII.

(c) 2 ASSISTANT ARCHITECTS—Grade VI.

(d) 1 ASSISTANT QUANTITY SURVEYOR—Grade V.

(e) 1 TECHNICAL ASSISTANT—Grade IV.

(f) 1 ARCHITECTURAL ASSISTANT—Grade I.

Candidates for appointment (a) should be qualified Quantity Surveyors with a practical knowledge of building contract procedure and experience in the preparation of estimates, bills of quantities, valuations for interim certificates and settling final accounts for all types of local authority building contracts.

Applicants for appointment (b) should be Associate Members of the R.I.B.A. The Architect appointed will be required to take charge of a clearance area development scheme and previous experience of this type of work is desirable. In addition applicants should have experience in the layout of contemporary housing schemes and the design and construction of municipal houses and multi-storey flats.

Applicants for appointment (c) should be qualified members of the R.I.B.A., with housing and education experience and be capable of administering building contracts.

Appointment (d) applicants should preferably be qualified Quantity Surveyors with practical experience in the preparation of bills of quantities.

Candidates for appointment (e) to be capable of preparing approximate estimates and supervising general maintenance work to schools and public buildings.

For appointment (f) applicants to be good draughtsmen, with experience in the preparation of working drawings and details from preliminary sketches.

The appointments will be superannuable, subject to the National Conditions of Service and to the selected candidate passing a medical examination.

Applications, giving particulars of age, qualifications and experience and the names of two referees should be delivered to the undersigned not later than Monday, November 22, 1954.

Consideration will be given to married applicants with regard to housing accommodation.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings,
OLDBURY.

November 5, 1954. [8479]

COUNTY OF HUNTINGDON

COUNTY ARCHITECT'S DEPARTMENT

APPLICATIONS are invited from suitably qualified persons for the following appointments:

(a) TECHNICAL ASSISTANT (Heating and Electrical Engineer). Present Grades A.P.T. III—IV, commencing salary according to qualifications and experience.

(b) QUANTITY SURVEYING ASSISTANT. Present Grades A.P.T. III—IV, commencing salary according to qualifications and experience.

In the case of (a) candidates should have had good practical experience in the design and installation of equipment for low pressure hot water heating and domestic hot and cold water systems and electrical installations for Schools, Police and other County Buildings.

The appointments will be subject to the provisions of the Local Government Superannuation Acts and the persons appointed will be required to pass a medical examination.

Applications, stating age, qualifications, experience, present position and salary, together with the names of two referees, should be delivered to S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, in a sealed envelope appropriately endorsed, by Monday, 22nd November, 1954.

A. C. AYLWARD,
Clerk of the County Council.

County Buildings,
Huntingdon.

5th November, 1954. [8490]

APPOINTMENTS—contd.

HAMPSHIRE.

APPLICATIONS are invited for the post of ARCHITECTURAL ASSISTANT, Grades II, III or IV (£520-£565, £550-£595 or £580-£625) according to experience. Candidates should have passed the Intermediate examination of the R.I.B.A. or its equivalent, at one of the recognised schools of Architecture, and have had suitable experience.

The appointment is pensionable and subject to a satisfactory medical report. In approved cases the County Council are prepared to assist newly appointed staff to meet removal and other expenses.

Applications on forms obtainable from the County Architect, The Castle, Winchester, should be returned to him by the 18th November. [8475]

COUNTY BOROUGH OF EAST HAM

TEMPORARY ESTIMATOR, Grade V.

ARCHITECTURAL ASSISTANT, Grade V. £620-£670

LONDON Weighting is paid in addition. Salary in excess of the minima may be paid according to qualifications and experience.

Subsistence allowances may be granted over a reasonable period to persons appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by 19th November, 1954, from the Town Clerk, Town Hall, East Ham, E.6. [8487]

COUNTY BOROUGH OF ROCHDALE.

APPLICATIONS are invited for the appointments of two ASSISTANT ARCHITECTS in the Borough Surveyor's Department at salaries of £620 rising to £670 per annum (Grade A.P.T. V). To qualify for these salaries, applicants must be Registered Architects and have a thorough knowledge of architectural work with experience in the design of public buildings and/or dwellings and the supervision of Contracts. Applications will be considered from candidates who may not be so fully qualified, the grade and salary of the position to be commensurate with qualifications.

The appointments will be subject to the provisions of the Local Government Superannuation Act and to the selected candidates passing a Medical Examination. Canvassing is prohibited and candidates must disclose whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications stating age, qualifications and full particulars of experience, together with the names and addresses of two persons to whom reference may be made and endorsed "Assistant Architect" must be delivered to the Borough Surveyor, Town Hall, Rochdale, by 9 a.m. on Monday, 29th November, 1954. [8482]

BOROUGH OF WORTHING

APPOINTMENT OF DRAUGHTSMAN

APPLICATIONS are invited for appointment as DRAUGHTSMAN in the Architectural Section of the Borough Engineer's Department at a salary in accordance with the General Division grade of the National Scheme of Conditions of Service of Local Government Officers (i.e., salary according to age rising to £470 at age 30 years).

Candidates should be good draughtsmen and should preferably have had some architectural training.

The appointment is subject to the Local Government Superannuation Acts, and to the successful applicant passing satisfactorily a medical examination.

The appointment will be terminable by one month's notice on either side.

Applications, endorsed "Draughtsman," stating age, particulars of training, experience and qualifications, if any, and accompanied by copies of two recent testimonials, should be sent to the Borough Engineer, Town Hall, Worthing, so as to reach him not later than Friday, November 19, 1954.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall, Worthing.
27th October, 1954. [8486]

APPOINTMENTS—contd.

URBAN DISTRICT COUNCIL OF WATH-UPON-DEARNE.

APPOINTMENT OF FIRST TECHNICAL ASSISTANT (HOUSING).

APPLICATIONS are invited for the above post on A.P.T. Grade III of the National Scales commencing at £550 per annum. (Amended Grade II from 1.1.55.) The post will be subject to the usual local government service conditions; to satisfactory medical examination and to termination on one month's notice on either side.

It is essential that applicants should have had training in architectural work and experience in the design and construction of municipal housing schemes.

Housing accommodation will be considered if required.

Canvassing, directly or indirectly will disqualify. Applications, stating age, qualifications, training, experience and previous appointments, together with copies of two recent testimonials should be delivered in a sealed envelope endorsed in the top left-hand corner "Technical Assistant" not later than first post on Monday, November 15th, 1954.

R. H. FISH,
Clerk of the Council.

The Town Hall,
Wath-upon-Deane,
Rotherham,
Yorkshire. [8473]

METROPOLITAN BOROUGH OF LEWISHAM.

APPLICATIONS are invited from suitably qualified candidates for the post of ASSISTANT ARCHITECT (2). Salary within the range £500-£890 p.a. according to experience and qualifications. Further particulars and form of application from the Town Clerk, Lewisham Town Hall, Catford, S.E.6. Closing date November 20, 1954. [8478]

TRACER (WOMAN) required by the Crown Agents for their London Drawing Office, commencing pay between 116/1 and 134/10 a week according to age, rising by annual increments of 3/- a week to 140/2 and 6/- a week to 147/- for 45½ hours week; hours 9 a.m.-5.30 p.m. (12 noon Saturdays); paid holidays at rate of 18 days a year; refreshment club on premises—low charges for lunch and tea; candidates must be 21 years of age or over and preference will be given to experienced tracers. Write stating age and experience to the Establishment Officer, Crown Agents, 4, Millbank, London, S.W.1, quoting 0/225. [8469]

LONDON COUNTY COUNCIL require TEMPORARY TECHNICAL ASSISTANT (Quantities) for the preparation of bills of quantities and estimates and measurement of final accounts for new lay-outs, maintenance works and buildings in parks.

Salaries up to £688 a year according to experience and qualifications. Application forms from The Chief Officer, Parks Dept., Spring Gardens, S.W.1. (1401.) [8480]

BOROUGH OF REIGATE

SENIOR ARCHITECTURAL ASSISTANT required. Salary scale on amended Grade III £675 p.a. from January 1st, 1955, with increments of £25 p.a. payable subject to satisfactory service on April 1st, 1955 and 1956. Applicants should have previous experience in design of buildings, estate development and conversion of existing properties into flats. Housing accommodation will be provided, if necessary, for married man. Application Forms, obtainable from Borough Surveyor, Town Hall, Reigate, must be returned to him endorsed "Senior Architectural Assistant" by November 15th, 1954.

HEBER DAVIES,
Town Clerk. [8495]

MISCELLANEOUS SECTION

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No responsibility accepted for errors.

ARCHITECTURAL APPOINTMENTS VACANT

ARCHITECT'S Assistant, junior, required. Good draughtsman. Write stating age, experience, salary required.—T. Mortimer Burrows & Partners, 44, Bedford Row, Holborn, W.C.1. [8446]

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTS' assistant required in busy Birmingham office.—Full particulars, Box 8805. [8484]

ARCHITECTURAL Assistant urgently required for busy, varied and progressive country practice.—Write giving details age, experience and salary required.—Geoffrey Bazley & Barbary, 15-16, Alverton, Penzance, Cornwall. [8472]

WEST END firm of architects require experienced assistant architect, primarily for site supervision, good working drawings and appreciation of contemporary architecture essential; salary £800-£900, five-day week.—Box 8772. [8474]

QUALIFIED and experienced assistant required for extensive general practice.—Apply stating salary required to R. Potter, F.R.I.B.A. and R. Hare, B.A.(Arch.) A.R.I.B.A., De Vaux House, Salisbury. [8483]

OLD-established Firm of Chartered Surveyors require Senior Architectural Assistant in Architect's Department. Applicants must be capable of taking complete charge of work. Apply, stating age, experience and salary required, to Box 8811. [8492]

SENIOR Assistant, R.I.B.A. Final Standard, required immediately for busy Surrey practice. Sound general experience including design and administration jobs essential. Excellent prospects for responsible man. Please state age, qualifications, past experience and salary required, Box 8810. [8491]

THREE Architectural Assistants required in busy Coventry office, handling large contracts. All standards up to Intermediate or equivalent considered. Good salaries. Travelling expenses paid to applicants selected for interview. Pension scheme available.—W. S. Hattrell & Partners, 1, Queen's Rd., Coventry. [8452]

£500 to £700 p.a. salary offered for assistant to take part in large-scale development and remodeling of petrol filling stations, service station, garages, workshops, etc. Must be capable of working independently. Should be of intermediate standard. Work will involve original design, site visits and a high standard of presentation. Five-day week, good pension and life assurance scheme sickness benefits and free luncheon vouchers. Please write, giving full personal particulars, qualifications and experience to Box 8816, quoting Ref. HPA 363. [8488]

SITUATIONS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

BUILDERS with carpentry experience are required to work as missionaries with the Church of Scotland in Africa. For further details apply to the Candidates Secretary, Foreign Mission Department, 121, George St., Edinburgh, 2. [8485]

DRAUGHTSMAN required in Group Engineer's Department at Farnborough Hospital, Farnborough, Kent. Candidates should have at least three years' experience in architectural drawing. Salary £340 a year at 21, rising by £20 to £500. Applications, together with details of experience and copies of two recent testimonials to the Group Engineer. [8489]

SITUATIONS WANTED

A.R.I.B.A. (39) seeks position as Senior Assistant with a view to partnership. Box 8820. [8493]

A.R.I.B.A. (39), varied experience (schools, housing, factories, etc.) seeks responsible position; starting salary £1,000 p.a.—Box 8699. [8467]

EXPERIENCED A.R.I.B.A., school trained (40), seeks partnership in established practice or position leading rapidly thereto. Preferably Cheshire, Shropshire or London areas. Capital available. Box 8821. [8494]

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FOR sale, 50,000 yds. 7/064in V.I.R. insulated taped and braided lighting cable, 250 volt; £55 per 100yds.—Box 8786. [8481]

ALL hardwood mouldings, plain and embossed, embossed ornaments and dowels; send for catalogue and to-day's lowest trade prices.—Dareve's Moulding Mills, Ltd., 60, Pownall Road, Dalston, E.8. Clissold 1543/4. [0142]

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CHASESIDE mechanical shovels, Major type, by day, week or contract, with drivers; tipping lorries supplied if required with shovels.—Henry Froud, Ltd., Primrose Wharf, Tunnel Ave., Greenwich, S.E.10. Tel. Greenwich 0072-3. [0138]

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EX-Army Nissen and other buildings available; also, manufactured buildings.—Universal Supplies (Belvedere), Ltd., Crabtree Manorway, Belvedere, Kent. Erith 2948. [0145]

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BOOKS, ETC.

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"INDUSTRIAL Brazing." By H. R. Brooker and E. V. Beaton, B.Sc. (Eng.), A.M.I.E.E. The first full-length study of this subject. Covers in detail all modern brazing methods, including torch, furnace, high-frequency induction, resistance, salt bath and dip, with chapters on the special techniques necessary for aluminium, stainless steels, beryllium copper, cemented carbides and vacuum tube construction. 35/- net from all booksellers. By post 36/2 from The Publishing Dept., Dorset House, Stamford St., London, S.E.1.

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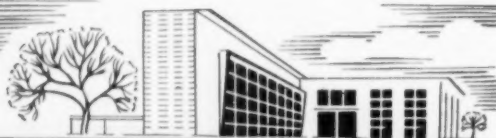
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